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February 5, 2014

Mr. Kenneth Bardo - LU-9J
U.S. EPA Region V
Corrective Action Section
77 West Jackson Boulevard
Chicago, IL 60604-3507

Re: PCB Groundwater Quality Assessment Program
3rd Quarter 2013 Data Report
Solutia Inc., W. G. Krummrich Plant, Sauget, IL

Dear Mr. Bardo:

Enclosed please find the PCB Groundwater Quality Assessment Program 4th Quarter 2013 Data Report for Solutia Inc.'s W. G. Krummrich Plant, Sauget, IL. The scope of monitoring after the February 2014 event will depend on US EPA's response to the "Evaluation of 3Q08 - 3Q13 Data" that Solutia submitted on January 13, 2014.

If you have any questions or comments regarding this report, please contact me at (314) 674-3312 or gmrina@eastman.com

Sincerely,

Gerald M. Rinaldi
Manager, Remediation Services

Enclosure

cc: Distribution List

DISTRIBUTION LIST

PCB Groundwater Quality Assessment Program
4th Quarter 2013 Data Report
Solutia Inc., W. G. Krummrich Plant, Sauget, IL

USEPA

Stephanie Linebaugh
USEPA Region 5 - SR6J, 77 West Jackson Boulevard, Chicago, IL 60604

Solutia

Donn Haines 500 Monsanto Avenue, Sauget, IL 62206-1198

4TH QUARTER 2013
DATA REPORT

PCB GROUNDWATER QUALITY ASSESSMENT PROGRAM

SOLUTIA INC.
W.G. KRUMMRICH FACILITY
SAUGET, ILLINOIS

Prepared for
Solutia Inc.
575 Maryville Centre Drive
St. Louis, Missouri 63141

January 2014

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Project: 21562962.00002

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1.0 INTRODUCTION

This report presents the results of the 4th Quarter 2013 (4Q13) sampling event performed at the Solutia Inc. (Solutia) W.G. Krummrich Facility located in Sauget, Illinois (Site). This sampling event was conducted in accordance with the Revised PCB Groundwater Quality Assessment Program Work Plan (Solutia 2009). The Site location map is presented in **Figure 1**.

The PCB Groundwater Quality Assessment Program well network consists of ten monitoring wells, as follows (**Figure 2**):

- Two source area wells, PMA-MW-4S and PMA-MW-4D, are screened in the Shallow Hydrogeologic Unit (SHU) (designated with an "S") and Deep Hydrogeologic Unit (DHU) (designated with a "D"), respectively.
- Three well clusters (PMA-MW-1S/M, PMA-MW-2S/M and PMA-MW-3S/M) are located down-gradient of the source area. These clusters include wells screened in the SHU and Middle Hydrogeologic Unit (MHU) (designated with an "M").
- Two individual wells designated PMA-MW-5M and PMA-MW-6D are located further down-gradient of the source area, with PMA-MW-5M screened in the MHU and PMA-MW-6D screened in the DHU.

Groundwater samples were collected from the ten monitoring wells during the 4Q13 sampling event.

Field sampling activities were conducted in accordance with the procedures outlined in the Revised PCB Groundwater Quality Assessment Program Work Plan, including the collection of appropriate quality assurance and quality control (QA/QC) samples. The following section summarizes the field investigative procedures.

2.0 FIELD PROCEDURES

URS Corporation (URS) conducted the 4Q13 PCB Groundwater Quality Assessment Program field activities on October 30-31 and November 11-12, 2013.

Groundwater Level Measurements – An oil/water interface probe was used to measure depth to static groundwater levels and determine the presence of non-aqueous phase liquids (NAPL) in the PCB Groundwater Quality Assessment Program well network. Depth to groundwater measurements were collected from accessible existing wells (i.e., BSA-, CPA-, GM-, K- , PSMW- and PMA-series) and piezometer clusters (installed for the Sauget Area 2 RI/FS and WGK CA-750 Environmental Indicator projects) specified in the Revised PCB Groundwater Quality Assessment Program Work Plan.

Well gauging information for the 4Q13 event is presented in **Table 1**. As the middle and deep hydrogeologic units are the primary migration pathway for constituents present in groundwater at the WGK Facility, a groundwater potentiometric surface map based on water level data from wells screened in the MHU and DHU is presented as **Figure 3**.

Groundwater Sampling - Low-flow sampling techniques were used for groundwater sample collection. At each monitoring well, disposable, low-density polyethylene tubing was attached to a submersible pump, which was then lowered into the well to the middle of the screened interval. Monitoring wells were purged at a rate of 300 mL/minute to minimize drawdown. If significant drawdown occurred, flow rates were reduced.

Drawdown was measured periodically throughout purging to ensure that it did not exceed 25% of the distance between the pump intake and the top of the screen. Once the flow rate and drawdown were stable, field measurements were collected approximately every three to four minutes. Purging of a well was considered complete when the following water quality parameters remained stable over three consecutive flow-thru cell volumes:

Parameter	Stabilization Guidelines
Dissolved Oxygen (DO)	+/- 10% or +/-0.2 mg/L, whichever is greatest
Oxidation-Reduction Potential (ORP)	+/- 20 mV
pH	+/- 0.2 units
Specific Conductivity	+/- 3%

Sampling commenced upon completion of purging. Prior to sample collection, the flow-thru cell was bypassed to allow for collection of uncompromised groundwater. Consistent with the work plan, samples were collected at a flow rate less than or equal to the rate at which stabilization was achieved.

Per the workplan, NAPL is to be sampled if present in a well. Because no wells had measurable NAPL, groundwater samples were collected at each well using the procedures described above.

Quality Assurance/Quality Control (QA/QC) samples consisting of analytical duplicates (AD) and equipment blanks (EB) were collected at a rate of 10% and matrix spike/matrix spike duplicates (MS/MSD) were collected at a rate of 5%, complying with the work plan. All samples were submitted to TestAmerica for PCB analysis.

Each sample was labeled immediately following collection. The sample identification system used for each sample involved the following nomenclature “PMA-MW#-MMYY-QAC” where:

- **PMA-MW#** – Monitoring Well Location (PCB Manufacturing Area (PMA)) and Number
- **MMYY** – Month and year of sampling quarter, e.g.: November (4th Quarter), 2013 (1113)

- **QAC** – denotes QA/QC samples (when applicable):
  - **EB** – equipment blank
  - **AD** – analytical duplicate
  - **MS or MSD** – Matrix Spike or Matrix Spike Duplicate

Upon collection and labeling, sample containers were immediately placed inside an iced cooler, packed in such a way as to help prevent breakage and maintain inside temperature at or below approximately 4°C. Field personnel recorded the project identification and number, sample description/location, required analysis, date and time of sample collection, type and matrix of sample, number of sample containers, analysis requested/comments, and sampler signature/date/time, with permanent ink on a chain-of-custody (COC). Coolers were sealed between the lid and sides with a custody seal, and then shipped to TestAmerica in Savannah, Georgia by means of overnight delivery service (FedEx). Field sampling data sheets are included in **Appendix A** and COC forms are included in **Appendix B**.

Field personnel and equipment were decontaminated to ensure the health and safety of those present, maintain sample integrity, and minimize movement of contamination between the work area and off-site locations. Equipment used on-site was decontaminated prior to beginning work, between sampling locations and/or uses, and prior to demobilizing from the site. Non-disposable purging and sampling equipment was decontaminated between each sample acquisition by washing with an Alconox® or equivalent detergent wash and a distilled water rinse. Personnel and small equipment decontamination was performed at the sample locations. Disposable sampling equipment, such as gloves were collected and bagged on a daily basis and managed in accordance with Solutia procedures. Purge water was containerized and handled per Solutia procedures.

3.0 LABORATORY PROCEDURES

Samples were analyzed by TestAmerica for PCBs using Method 680. For presentation purposes in this report, results of the PCB isomer groups (e.g., monochlorobiphenyl, dichlorobiphenyl, etc.) are summed and presented as “total PCBs.” Laboratory results were provided in electronic and hard copy formats.

4.0 QUALITY ASSURANCE

Analytical data were reviewed for quality and completeness, as described in the Revised PCB Water Quality Assessment Work Plan (Solutia 2009). Data qualifiers were added, as appropriate, and are included on the data tables and the laboratory report. The Quality Assurance report is included as **Appendix C**. The laboratory reports along with the data review reports are included in **Appendix D**.

A total of 13 samples (ten investigative groundwater samples, one field duplicate, and one matrix spike and matrix spike duplicate (MS/MSD) pair) were analyzed by TestAmerica Savannah for PCBs. Additionally, one equipment blank was collected and analyzed by Test America. Results for the various analyses were submitted as sample delivery group (SDGs) KPM052 and KPM053. The samples contained in SDGs KPM052 and KPM053 are listed below.

KPM052	
PMA-MW-1S-1113	PMA-MW-2M-1113-AD
PMA-MW-1M-1113	PMA-MW-2M-1113-EB
PMA-MW-2S-1113	PMA-MW-5M-1113
PMA-MW-2M-1113	PMA-MW-6D-1113
KPM053	
PMA-MW-3S-1113	PMA-MW-4S-11113
PMA-MW-3M-1113	PMA-MW-4D-1113

Evaluation of the analytical data followed procedures outlined in the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, (USEPA 2008) and the Revised PCB Water Quality Assessment Work Plan (Solutia 2009). Based on the above mentioned criteria, results reported for the analyses performed were accepted for their intended use. Acceptable levels of accuracy and precision, based on LCS, surrogate and field duplicate data were achieved for these SDGs to meet the project objectives. Completeness, which is defined to be the percentage of analytical results which are judged to be valid, including estimated (**J/UJ**) data, was 100 percent.

5.0 OBSERVATIONS

This section presents a brief summary of the groundwater analytical results from the 4Q13 PCB Groundwater Quality Assessment sampling event. A summary of the laboratory results is provided in **Table 2** and the entire laboratory data package is provided in **Appendix D.**

Shallow Hydrogeologic Unit

During previous sampling events, measurable DNAPL has been periodically observed in the source area SHU monitoring well PMA-MW-4S (last observed 3Q11). DNAPL was not detected in PMA-MW-4S by the oil/water interface probe during the 4Q13 event. As a result, a water sample was collected, and total PCBs were detected at a concentration of 113.3 µg/L. PCBs were detected in one of three down-gradient PCB Groundwater Quality Assessment Program SHU monitoring well (PMA-MW-3S) at a concentration of 0.16 µg/L. Such data indicate that PCBs in the SHU are attenuating to a certain extent over the 300 to 400 foot distance between

PMA-MW-4S and the three down-gradient SHU monitoring wells. PCB sampling results for the SHU are presented on **Figure 4**.

Middle/Deep Hydrogeologic Unit

Laboratory analytical results for monitoring well PMA-MW-4D, located in the Former PCB Manufacturing Area, indicated an estimated total PCB concentration of 0.70 µg/L for the 4Q13 sampling event. PCBs were also detected in each of the five down-gradient monitoring wells at concentrations of 0.34 µg/L (PMA-MW-1M), 0.48 µg/L (PMA-MW-3M), 0.1 µg/L (PMA-MW-5M), 0.11 µg/L (PMA-MW-6D), and estimated concentrations of 1.4 and 3.3 µg/L (PMA-MW-2M and duplicate). **Figure 5** displays the 4Q13 PCB sampling results for the MHU/DHU.

Mann-Kendall trend analyses of total PCBs in unfiltered samples of groundwater from selected monitoring wells within (PMA-MW-4D) or down-gradient of (PMA-MW-1M, -2M, -3S, -3M, and -6D) the former PCB Manufacturing Area are presented in **Table 3**. Similar to previous quarterly events, the data appear to exhibit an upward trend in concentrations at monitoring wells PMA-MW-1M, PMA-MW-2M and PMA-MW-4D. Concentrations are stable or exhibit no trends at monitoring wells PMA-MW-3S and PMA-MW-3M and the concentration at PMA-MW-6D is decreasing.

6.0 REFERENCES

Solutia Inc, 2009. Revised PCB Groundwater Quality Assessment Program Work Plan, W.G. Krummrich Facility, Sauget, IL, Prepared by URS Corporation, May 2009.

U.S. Environmental Protection Agency (USEPA), 2008 Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review.

Figures

FALLING SPRINGS ROAD

STERLING STEEL

SITE H

SITE L

SITE M

SITE N

SITE I

DEAD CREEK

SITE G

CONTAINMENT CELL

CERRO COPPER

QUEENY AVENUE

ROUTE 3

AFTON CHEMICAL

MONSANTO AVENUE

W. G. KRUMMRICH FACILITY

MIDWEST RUBBER

BIG RIVER ZINC

ROUTE 3

CENTER ETHANOL COMPANY, LLC

LOT F

SITE O

PHILLIPS PETROLEUM

SITE P

AMEREN

PCHEM POTW

AMERICAN BOTTOMS POTW

SITE S

CLAYTON CHEMICAL

VEOLIA INCINERATION

KINDER MORGAN

SITE R

SITE Q

GROUNDWATER PUMPING WELLS

BARRIER WALL

MISSISSIPPI RIVER

LEGEND

W.G. KRUMMRICH FACILITY

SAUGET AREA #1

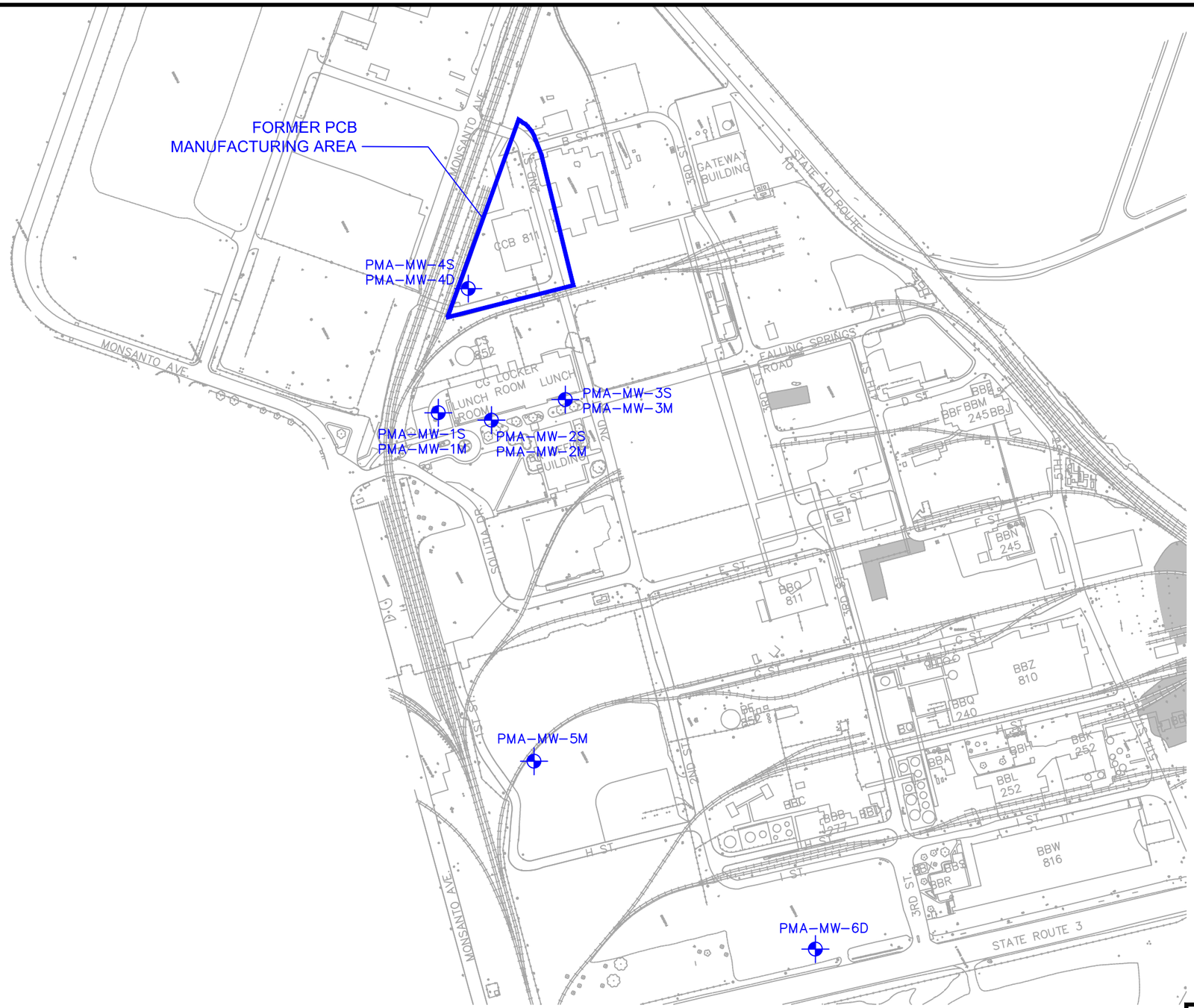
SAUGET AREA #2

0 1000

SCALE FEET

PCB GROUNDWATER QUALITY ASSESSMENT PROGRAM 4TH QUARTER 2013 DATA REPORT W.G. KRUMMRICH FACILITY SAUGET, ILLINOIS		PROJECT NO. 21562962
URS		
DRN. BY:djd January 2014 DSGN. BY:nm CHKD. BY:nm	Site Location Map	FIG. NO. 1

File: P:\ENVIRONMENTAL\SOLUTIA WGK\QUARTERLY MONITORING\PCB\2013\4Q13\REPORT\FIGURES\FIG-1 SITE LOCATION MAP.DWG Last edited: JAN. 20, 14 @ 3:28 p.m. by: curt_smith



LEGEND

MONITORING WELL LOCATION

NOTES:

1. REFER TO TABLE 1 FOR MONITORING WELL CONSTRUCTION INFORMATION.

N E S W

0 300

SCALE FEET

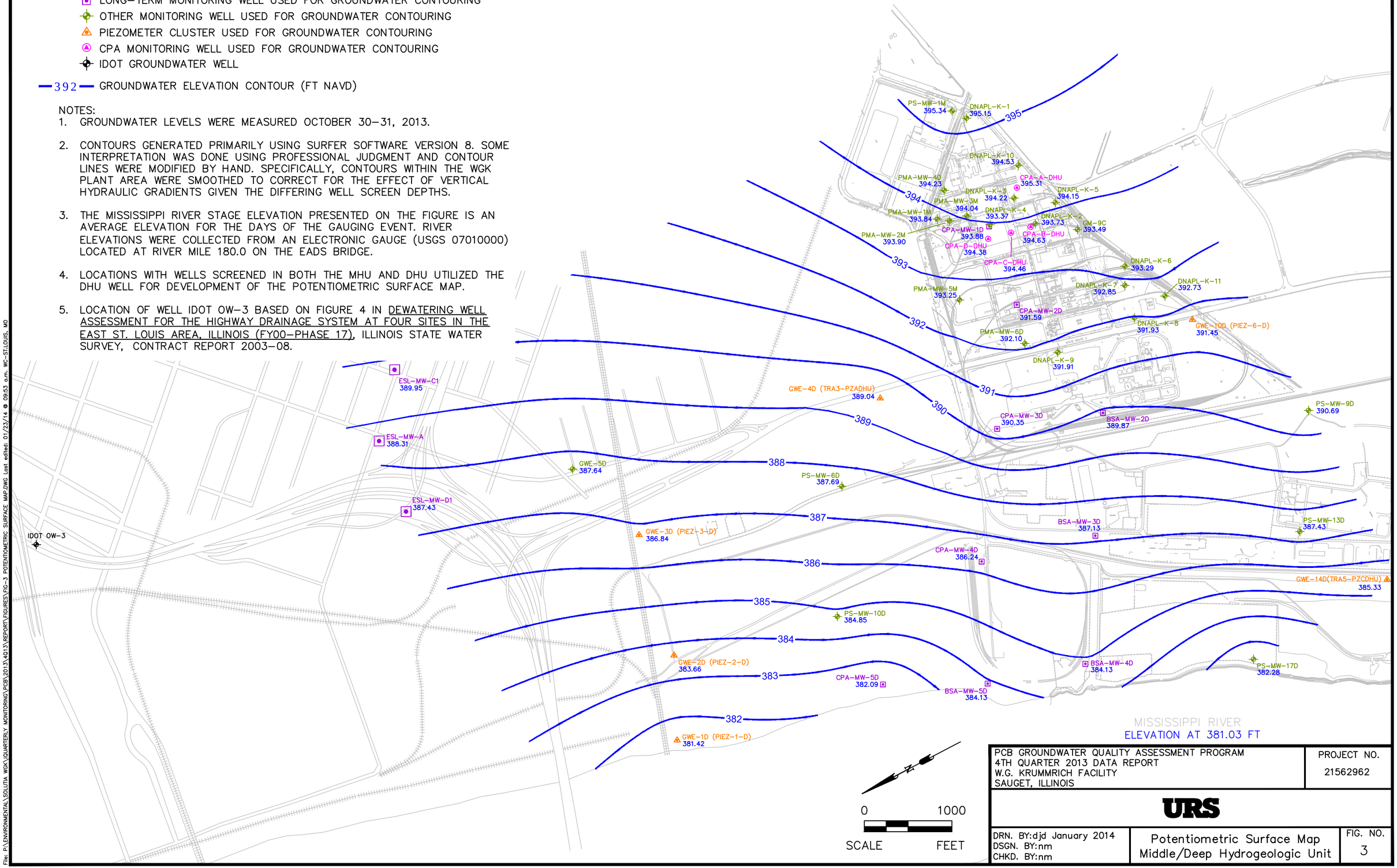
PCB GROUNDWATER QUALITY ASSESSMENT PROGRAM 4TH QUARTER 2013 DATA REPORT W.G. KRUMMRICH FACILITY SAUGET, ILLINOIS	PROJECT NO. 21562962
URS	
DRN. BY: djd January 2014 DSGN. BY: nm CHKD. BY: nm	Former PCB Manufacturing Area Monitoring Well Locations
	FIG. NO. 2

LEGEND

- LONG-TERM MONITORING WELL USED FOR GROUNDWATER CONTOURING
- OTHER MONITORING WELL USED FOR GROUNDWATER CONTOURING
- PIEZOMETER CLUSTER USED FOR GROUNDWATER CONTOURING
- CPA MONITORING WELL USED FOR GROUNDWATER CONTOURING
- IDOT GROUNDWATER WELL
- 392 GROUNDWATER ELEVATION CONTOUR (FT NAVD)

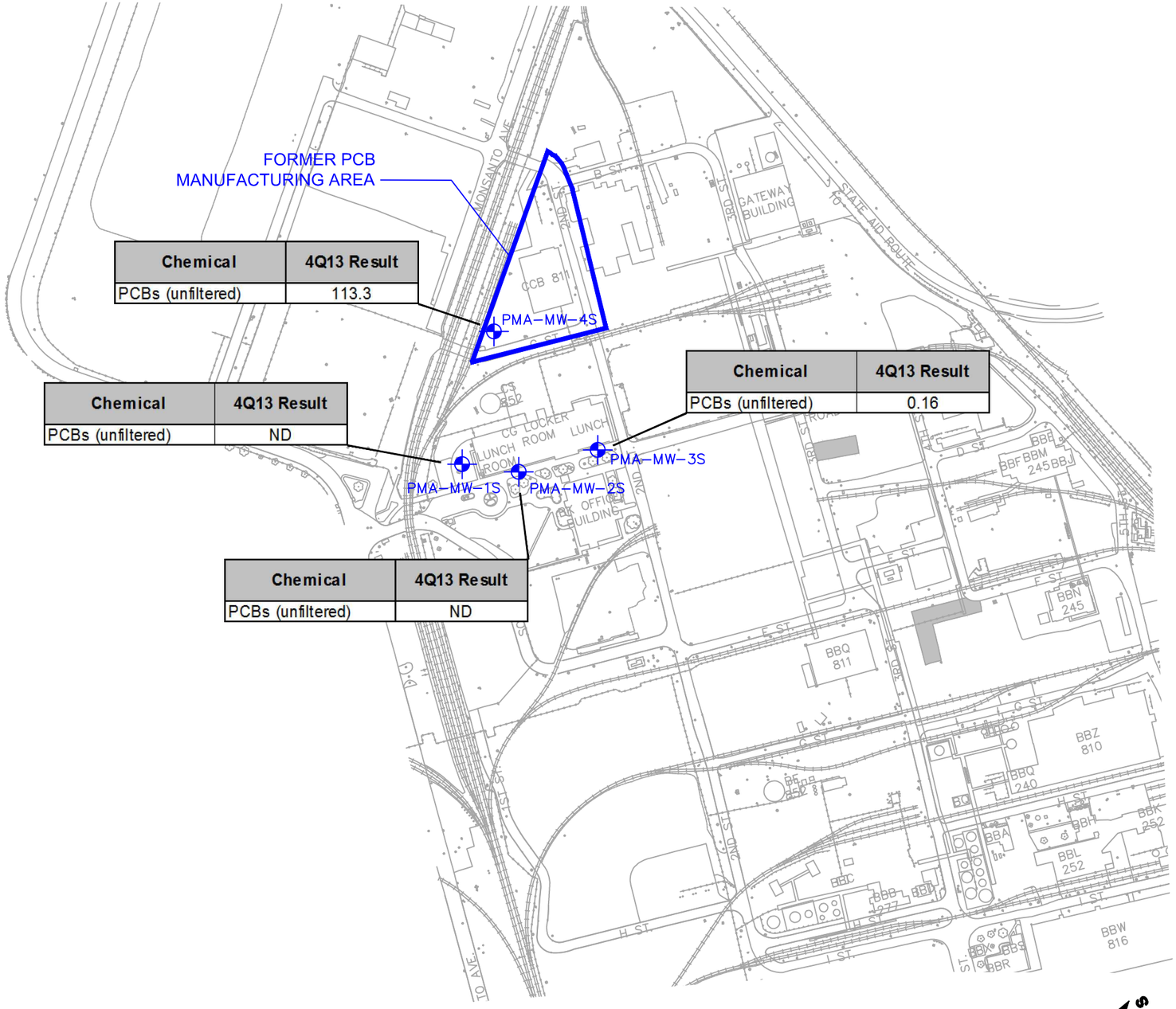
NOTES:

1. GROUNDWATER LEVELS WERE MEASURED OCTOBER 30-31, 2013.
2. CONTOURS GENERATED PRIMARILY USING SURFER SOFTWARE VERSION 8. SOME INTERPRETATION WAS DONE USING PROFESSIONAL JUDGMENT AND CONTOUR LINES WERE MODIFIED BY HAND. SPECIFICALLY, CONTOURS WITHIN THE WGK PLANT AREA WERE SMOOTHED TO CORRECT FOR THE EFFECT OF VERTICAL HYDRAULIC GRADIENTS GIVEN THE DIFFERING WELL SCREEN DEPTHS.
3. THE MISSISSIPPI RIVER STAGE ELEVATION PRESENTED ON THE FIGURE IS AN AVERAGE ELEVATION FOR THE DAYS OF THE GAUGING EVENT. RIVER ELEVATIONS WERE COLLECTED FROM AN ELECTRONIC GAUGE (USGS 07010000) LOCATED AT RIVER MILE 180.0 ON THE EADS BRIDGE.
4. LOCATIONS WITH WELLS SCREENED IN BOTH THE MHU AND DHU UTILIZED THE DHU WELL FOR DEVELOPMENT OF THE POTENTIOMETRIC SURFACE MAP.
5. LOCATION OF WELL IDOT OW-3 BASED ON FIGURE 4 IN DEWATERING WELL ASSESSMENT FOR THE HIGHWAY DRAINAGE SYSTEM AT FOUR SITES IN THE EAST ST. LOUIS AREA, ILLINOIS (FY00-PHASE 17), ILLINOIS STATE WATER SURVEY, CONTRACT REPORT 2003-08.



PCB GROUNDWATER QUALITY ASSESSMENT PROGRAM 4TH QUARTER 2013 DATA REPORT W.G. KRUMMRICH FACILITY SAUGET, ILLINOIS	PROJECT NO. 21562962
URS	
DRN. BY:djd January 2014 DSGN. BY:nm CHKD. BY:nm	Potentiometric Surface Map Middle/Deep Hydrogeologic Unit
	FIG. NO. 3

File: P:\ENVIRONMENTAL\SOLUTIA WGK\QUARTERLY MONITORING\PCB\2013\4Q13\REPORT\FIGURES\FIG-3 POTENTIOMETRIC SURFACE MAP.DWG Last edited: 01/23/14 @ 09:53 a.m. WC-STLOUIS, MO



Chemical	4Q13 Result
PCBs (unfiltered)	113.3

Chemical	4Q13 Result
PCBs (unfiltered)	ND

Chemical	4Q13 Result
PCBs (unfiltered)	0.16

Chemical	4Q13 Result
PCBs (unfiltered)	ND

LEGEND

MONITORING WELL LOCATION

NOTES:

1. TOTAL PCB RESULTS INCLUDE THE SUM OF ALL METHOD 680 HOMOLOGS.
2. RESULTS ARE SHOWN IN ug/L.
3. ND = NOT DETECTED.

0 300

SCALE FEET

PCB GROUNDWATER QUALITY ASSESSMENT PROGRAM
4TH QUARTER 2013 DATA REPORT
W.G. KRUMMRICH FACILITY
SAUGET, ILLINOIS

PROJECT NO. 21562962

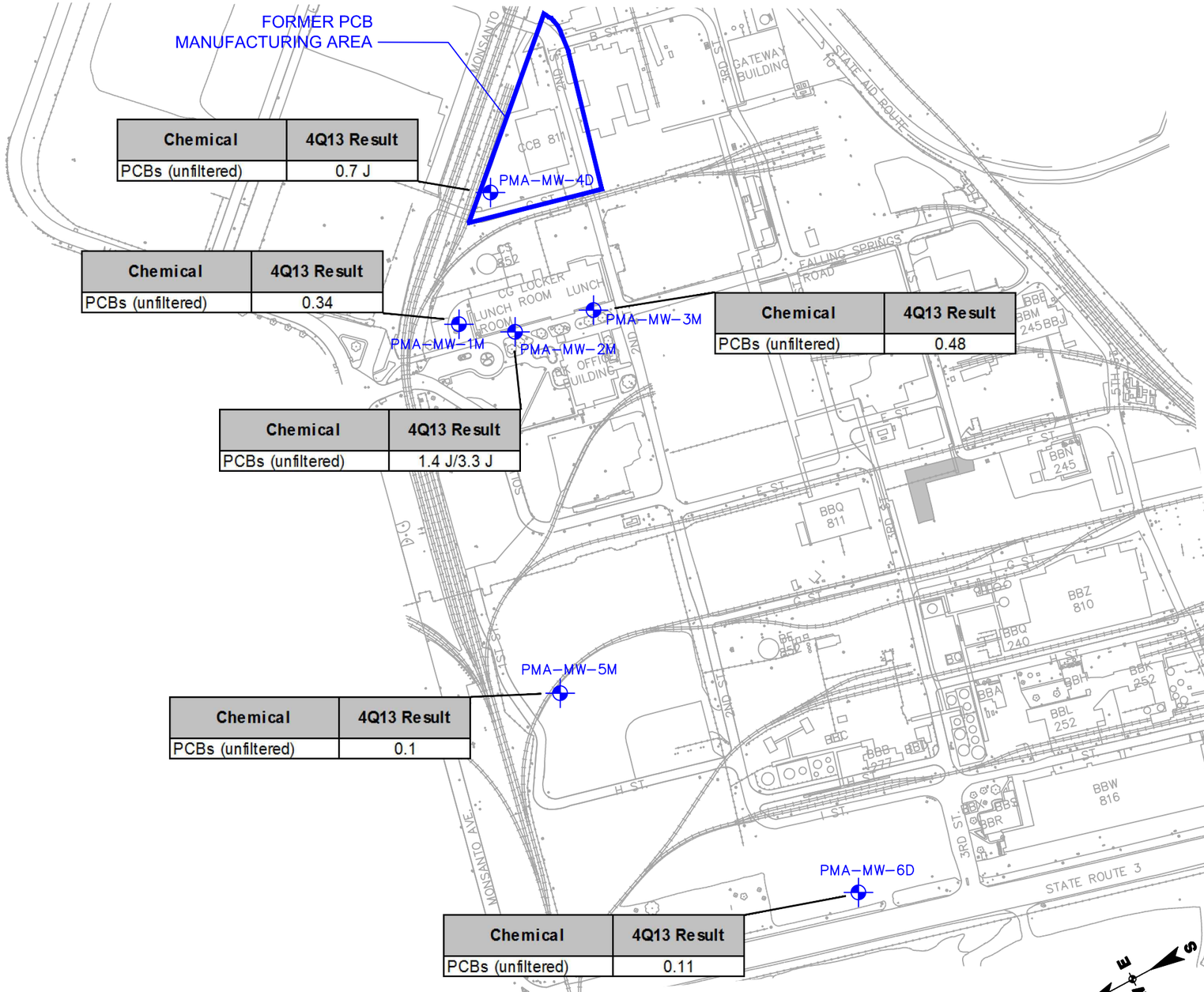
URS

DRN. BY: djd January 2014
DSGN. BY: nm
CHKD. BY: nm

PCB Results – SHU Wells

FIG. NO. 4

File: P:\ENVIRONMENTAL\SOUTH MISSOURI\QUARTERLY MONITORING\PCB\2013\Q4\13 REPORT\FIGURES\FIG-4 TOTAL PCBS SHU WELLS.dwg Last edited: JAN 21, 14 @ 4:10 p.m. by curt.smith



Chemical	4Q13 Result
PCBs (unfiltered)	0.7 J

Chemical	4Q13 Result
PCBs (unfiltered)	0.34

Chemical	4Q13 Result
PCBs (unfiltered)	0.48

Chemical	4Q13 Result
PCBs (unfiltered)	1.4 J/3.3 J

Chemical	4Q13 Result
PCBs (unfiltered)	0.1

Chemical	4Q13 Result
PCBs (unfiltered)	0.11

LEGEND

MONITORING WELL LOCATION

NOTES:

1. TOTAL PCB RESULTS INCLUDE THE SUM OF ALL METHOD 680 HOMOLOGS.
2. RESULTS ARE SHOWN IN ug/L.
3. ND = NOT DETECTED.
4. MULTIPLE SAMPLE RESULTS INDICATE A DUPLICATE SAMPLE.

PCB GROUNDWATER QUALITY ASSESSMENT PROGRAM
4TH QUARTER 2013 DATA REPORT
W.G. KRUMMRICH FACILITY
SAUGET, ILLINOIS

PROJECT NO. 21562962

URS

DRN. BY: djd January 2014
DSGN. BY: nm
CHKD. BY: nm

PCB Results – MHU / DHU Wells

FIG. NO. 5

Tables

See last page of table for notes.

Table 1
Monitoring Well Gauging Information

Well ID	Construction Details						October 30-31, 2013			
	Ground Elevation* (feet)	Casing Elevation* (feet)	Depth to Top of Screen (feet bgs)	Depth to Bottom of Screen (feet bgs)	Top of Screen Elevation* (feet)	Bottom of Screen Elevation* (feet)	Depth to Water (feet btoc)	NAPL Thickness (feet)	Depth to Bottom** (feet btoc)	Water Elevation* (feet)
Shallow Hydrogeologic Unit (SHU 395-380 feet NAVD 88)										
PMA-MW-1S	410.30	410.06	20.18	25.18	390.12	385.12	15.44	-	24.95	394.62
PMA-MW-2S	412.27	411.66	22.94	27.94	389.33	384.33	17.79	-	27.38	393.87
PMA-MW-3S	412.37	412.06	22.71	27.71	389.66	384.66	18.00	-	27.41	394.06
PMA-MW-4S	411.09	410.43	20.99	25.99	390.10	385.10	15.93	-	25.35	394.50
Middle Hydrogeologic Unit (MHU 380-350 feet NAVD 88)										
PMA-MW-1M	410.32	410.08	54.54	59.54	355.78	350.78	16.24	-	59.65	393.84
PMA-MW-2M	412.26	411.93	56.87	61.87	355.39	350.39	18.03	-	51.32	393.90
PMA-MW-3M	412.36	412.10	57.07	62.07	355.29	350.29	18.06	-	61.84	394.04
PMA-MW-5M	411.27	410.97	52.17	57.17	359.10	354.10	17.72	-	57.02	393.25
PS-MW-1M	409.37	412.59	37.78	42.78	371.59	366.59	17.25	-	46.07	395.34
Deep Hydrogeologic Unit (DHU 350 feet NAVD 88 - Bedrock)										
BSA-MW-2D	412.00	415.13	68.92	73.92	343.08	338.08	25.26	-	77.05	389.87
BSA-MW-3D	412.91	415.74	107.02	112.02	305.89	300.89	28.61	-	114.83	387.13
BSA-MW-4D	425.00	424.69	118.54	123.54	306.46	301.46	39.69	-	123.22	385.00
BSA-MW-5D	420.80	420.49	115.85	120.85	304.95	299.95	36.36	-	121.00	384.13
CPA-MW-1D	408.62	412.23	66.12	71.12	342.50	337.50	18.35	-	74.69	393.88
CPA-MW-2D	408.51	408.20	99.96	104.96	308.55	303.55	16.61	-	104.66	391.59
CPA-MW-3D	410.87	410.67	108.20	113.20	302.67	297.67	20.32	-	112.87	390.35
CPA-MW-4D	421.57	421.20	116.44	121.44	305.13	300.13	34.96	-	121.03	386.24
CPA-MW-5D	411.03	413.15	107.63	112.63	303.40	298.40	31.06	-	111.90	382.09
DNAPL-K-1	413.07	415.56	108.20	123.20	304.87	289.87	20.41	-	123.19	395.15
DNAPL-K-2	407.94	407.72	97.63	112.63	310.31	295.31	13.99	-	112.38	393.73
DNAPL-K-3	412.13	415.91	104.80	119.80	307.33	292.33	21.69	-	123.35	394.22
DNAPL-K-4	409.48	412.53	102.55	117.55	306.93	291.93	19.16	-	118.06	393.37
DNAPL-K-5	412.27	411.91	102.15	117.15	310.12	295.12	17.76	-	116.52	394.15
DNAPL-K-6	410.43	410.09	102.47	117.47	307.96	292.96	16.80	-	116.96	393.29
DNAPL-K-7	408.32	407.72	100.40	115.40	307.92	292.92	14.87	-	115.38	392.85
DNAPL-K-8	408.56	411.38	102.65	117.65	305.91	290.91	19.45	-	117.61	391.93

Table 1
Monitoring Well Gauging Information

Well ID	Construction Details						October 30-31, 2013			
	Ground Elevation* (feet)	Casing Elevation* (feet)	Depth to Top of Screen (feet bgs)	Depth to Bottom of Screen (feet bgs)	Top of Screen Elevation* (feet)	Bottom of Screen Elevation* (feet)	Depth to Water (feet btoc)	NAPL Thickness (feet)	Depth to Bottom** (feet btoc)	Water Elevation* (feet)
Deep Hydrogeologic Unit (DHU 350 feet NAVD 88 - Bedrock) (continued)										
DNAPL-K-9	406.45	405.97	97.42	112.42	309.03	294.03	14.06	-	111.25	391.91
DNAPL-K-10	413.50	413.25	105.43	120.43	308.07	293.07	18.72	-	120.26	394.53
DNAPL-K-11	412.20	411.78	105.46	120.46	306.74	291.74	19.05	-	120.26	392.73
GM-9C	409.54	411.21	88.00	108.00	321.54	301.54	17.72	-	108.34	393.49
GWE-1D	412.80	415.60	117.00	127.00	295.80	285.80	34.18	-	128.55	381.42
GWE-2D	417.45	417.14	127.00	137.00	290.45	280.45	33.48	-	136.72	383.66
GWE-3D	415.03	417.66	104.60	114.60	313.06	303.06	30.82	-	114.94	386.84
GWE-4D	406.05	405.74	74.00	80.00	332.05	326.05	16.70	-	78.80	389.04
GWE-5D	408.79	408.38	100.43	105.43	308.36	303.36	20.74	-	105.32	387.64
GWE-10D	410.15	412.87	102.50	112.50	307.65	297.65	21.42	-	114.86	391.45
GWE-14D	420.47	422.90	90.00	96.00	330.47	324.47	37.57	-	97.09	385.33
PMA-MW-4D	411.22	410.88	68.84	73.84	342.38	337.38	16.65	-	73.35	394.23
PMA-MW-6D	407.63	407.32	96.49	101.49	311.14	306.14	15.22	-	101.34	392.10
PS-MW-6D	404.11	406.63	102.32	107.32	304.31	299.31	18.94	-	109.86	387.69
PS-MW-9D	403.92	403.52	100.40	105.40	303.52	298.52	12.83	-	105.17	390.69
PS-MW-10D	409.63	412.18	103.78	108.78	308.40	303.40	27.33	-	111.31	384.85
PS-MW-13D	405.80	405.53	106.08	111.08	299.72	294.72	18.10	-	110.62	387.43
PS-MW-17D	420.22	423.26	121.25	126.25	298.97	293.97	40.98	-	134.03	382.28

Notes:
* - Elevation based upon North American Vertical Datum (NAVD) 88 datum
** - Total depths are measured annually during the first quarter of each year
bgs - below ground surface
btoc - below top of casing

Table 2
Groundwater Analytical Results

Sample ID	Sample Date	Units	Monochlorobiphenyl	Dichlorobiphenyl	Trichlorobiphenyl	Tetrachlorobiphenyl	Pentachlorobiphenyl	Hexachlorobiphenyl	Heptachlorobiphenyl	Octachlorobiphenyl	Nonachlorobiphenyl	Decachlorobiphenyl
Shallow Hydrogeologic Unit												
PMA-MW-1S-1113	11/11/2013	ug/L	<0.1	<0.1	<0.1	<0.2	<0.2	<0.2	<0.3	<0.3	<0.5	<0.5
PMA-MW-2S-1113	11/11/2013	ug/L	<0.098	<0.098	<0.098	<0.2	<0.2	<0.2	<0.29	<0.29	<0.49	<0.49
PMA-MW-3S-1113	11/12/2013	ug/L	**0.16**	<0.096	<0.096	<0.19	<0.19	<0.19	<0.29	<0.29	<0.48	<0.48
PMA-MW-4S-1113	11/12/2013	ug/L	**2.3**	**11**	**22**	**24**	**15**	**21**	**18**	<3	<5	<5
Middle/Deep Hydrogeologic Unit												
PMA-MW-1M-1113	11/11/2013	ug/L	**0.34**	<0.096	<0.096	<0.19	<0.19	<0.19	<0.29	<0.29	<0.48	<0.48
PMA-MW-2M-1113	11/11/2013	ug/L	**1.4 J**	<0.1	<0.1	<0.2	<0.2	<0.2	<0.31	<0.31	<0.51	<0.51
PMA-MW-2M-1113-AD	11/11/2013	ug/L	**3.3 J**	<0.095	<0.095	<0.19	<0.19	<0.19	<0.29	<0.29	<0.48	<0.48
PMA-MW-3M-1113	11/12/2013	ug/L	**0.48**	<0.099	<0.099	<0.2	<0.2	<0.2	<0.3	<0.3	<0.49	<0.49
PMA-MW-4D-1113	11/12/2013	ug/L	**0.31 J**	**0.39 J**	<0.098	<0.2	<0.2	<0.2	<0.29	<0.29	<0.49	<0.49
PMA-MW-5M-1113	11/11/2013	ug/L	**0.1**	<0.1	<0.1	<0.21	<0.21	<0.21	<0.31	<0.31	<0.52	<0.52
PMA-MW-6D-1113	11/11/2013	ug/L	**0.11**	<0.1	<0.1	<0.2	<0.2	<0.2	<0.3	<0.3	<0.51	<0.51

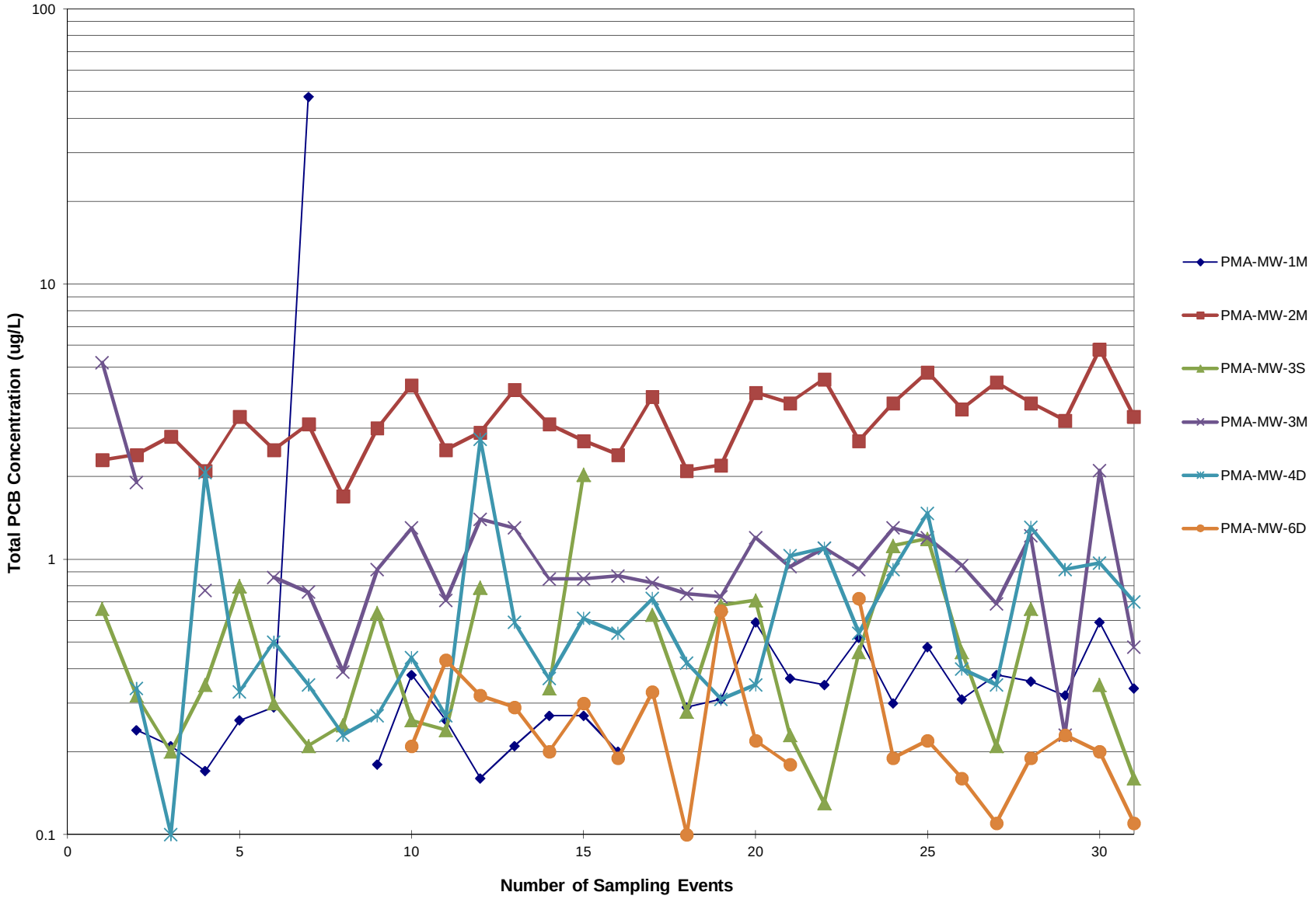
Notes:
µg/L = micrograms per liter
< = Result is non-detect, less than the reporting limit given.
BOLD indicates concentration greater than reporting limit.
AD = Analytical Duplicate
J = Estimated value

Table 3
Mann-Kendall Trend Analysis

Sampling Event	Quarter	TOTAL PCBs CONCENTRATION (ug/L)					
		PMA-MW-1M	PMA-MW-2M	PMA-MW-3S	PMA-MW-3M	PMA-MW-4D	PMA-MW-6D
1	2Q06	ND	2.3	0.66	5.18	NA	NA
2	3Q06	0.24	2.4	0.32	1.9	0.34	NA
3	4Q06	0.21	2.8	0.2	ND	0.1	NA
4	1Q07	0.17	2.1	0.35	0.77	2.07	NA
5	2Q07	0.26	3.3	0.8	ND	0.33	NA
6	3Q07	0.29	2.5	0.3	0.86	0.5	NA
7	4Q07	48	3.1	0.21	0.76	0.35	NA
8	1Q08	ND	1.7	0.25	0.39	0.23	NA
9	2Q08	0.18	3	0.64	0.92	0.27	NA
10	3Q08	0.38	4.3	0.26	1.3	0.44	0.21
11	4Q08	0.26	2.5	0.24	0.71	0.27	0.43
12	1Q09	0.16	2.9	0.79	1.4	2.73	0.32
13	2Q09	0.21	4.14	ND	1.3	0.59	0.29
14	3Q09	0.27	3.1	0.34	0.85	0.37	0.2
15	4Q09	0.27	2.7	2.03	0.85	0.61	0.3
16	1Q10	0.2	2.4	ND	0.87	0.54	0.19
17	2Q10	ND	3.9	0.63	0.82	0.72	0.33
18	3Q10	0.29	2.1	0.28	0.75	0.42	0.1
19	4Q10	0.31	2.199	0.68	0.73	0.31	0.65
20	1Q11	0.59	4.04	0.71	1.2	0.35	0.22
21	2Q11	0.37	3.7	0.23	0.94	1.03	0.18
22	3Q11	0.35	4.52	0.13	1.1	1.1	ND
23	4Q11	0.52	2.7	0.46	0.92	0.54	0.72
24	1Q12	0.3	3.7	1.12	1.3	0.92	0.19
25	2Q12	0.48	4.79	1.19	1.2	1.47	0.22
26	3Q12	0.31	3.52	0.46	0.95	0.4	0.16
27	4Q12	0.38	4.4	0.21	0.69	0.35	0.11
28	1Q13	0.36	3.7	0.66	1.22	1.31	0.19
29	2Q13	0.32	3.2	ND	0.23	0.92	0.23
30	3Q13	0.59	5.8	0.35	2.1	0.97	0.2
31	4Q13	0.34	3.3	0.16	0.48	0.7	0.11
Coefficient of Variation:		4.46	0.29	0.78	0.78	0.81	0.61
Mann-Kendall Statistic (S):		161	170	8	-24	145	-62
Confidence in Trend:		99.9%	99.8%	55.4%	66.6%	99.5%	96.8%
Concentration Trend:		**Increasing**	**Increasing**	No Trend	Stable	**Increasing**	Decreasing

Notes:
1. Confidence in Trend = Confidence (in percent) that constituent concentration is increasing (S>0) or decreasing (S<0).
   > 90% = Probably Increasing or Decreasing; >95% = Increasing or Decreasing
2. Values represent detected values. Values below the detection limit(s) are listed as non-detect (ND).
3. NA = Not Analyzed
4. See page 2 for graphical summary of results

Table 3
Mann-Kendall Trend Analysis



Appendix A

Groundwater Purging and Sampling Forms

In-Situ Inc.

Troll 9000 | **Low-Flow System**

11/11/13 | **ISI Low-Flow Log**

Project Information:

Operator Name	dmsj
Company Name	URS Corporation
Project Name	Solutia WGK
Site Name	Quarterly Groundwater Sampling - PCB

Pump Information:

Pump Model/Type	Proactive SS Monsoon
Tubing Type	LDPE
Tubing Diameter	0.19 [in]
Tubing Length	28.44 [ft]
Pump placement from TOC	22.46 [ft]

Well Information:

Well Id	PMA-MW-1S
Well diameter	2 [in]
Well total depth	24.95 [ft]
Depth to top of screen	19.94 [ft]
Screen length	60 [in]
Depth to Water	15.92 [ft]

Pumping information:

Final pumping rate	300 [mL/min]
Flowcell volume	758.57 [mL]
Calculated Sample Rate	152 [sec]
Sample rate	152 [sec]
Stabilized drawdown	0 [in]

Low-Flow Sampling Stabilization Summary

	Time	Temp [F]	pH [pH]	Cond [µS/cm @25C]	Turb [NTU]	RDO [mg/L]	ORP [mV]
Stabilization Settings			+/-0.2	+/-0.1 +/-3 %	+/-1 +/-10 %	+/-0.2 +/-10 %	+/-20
Last 5 Readings	12:10:01	65.91	6.78	1115.66	-0.75	0.17	39.38
	12:12:39	65.96	6.77	1120.23	-0.94	0.16	42.25
	12:15:16	66.32	6.76	1121.45	-0.94	0.15	44.22
	12:17:54	66.84	6.75	1123.77	-1.12	0.12	44.26
	12:20:31	67.01	6.74	1124.35	-1.07	0.10	46.09
Variance in last 3 readings	12:15:16	0.36	-0.01	1.22	0.00	-0.01	1.97
	12:17:54	0.52	-0.01	2.32	-0.19	-0.03	0.04
	12:20:31	0.17	-0.01	0.58	0.06	-0.02	1.84

Notes:

In-Situ Inc.

Troll 9000 | **Low-Flow System**

11/11/13 | **ISI Low-Flow Log**

Project Information:

Operator Name	dm sj
Company Name	URS Corporation
Project Name	Solutia WGK
Site Name	Quarterly Groundwater Sampling - PCB

Pump Information:

Pump Model/Type	Proactive SS Monsoon
Tubing Type	LDPE
Tubing Diameter	0.19 [in]
Tubing Length	62.8 [ft]
Pump placement from TOC	56.8 [ft]

Well Information:

Well Id	PMA-MW-1M
Well diameter	2 [in]
Well total depth	59.65 [ft]
Depth to top of screen	54.3 [ft]
Screen length	60 [in]
Depth to Water	16.85 [ft]

Pumping information:

Final pumping rate	300 [mL/min]
Flowcell volume	950.14 [mL]
Calculated Sample Rate	191 [sec]
Sample rate	191 [sec]
Stabilized drawdown	0 [in]

Low-Flow Sampling Stabilization Summary

	Time	Temp [F]	pH [pH]	Cond [µS/cm @25C]	Turb [NTU]	RDO [mg/L]	ORP [mV]
Stabilization Settings			+/-0.2	+/-0.1 +/-3 %	+/-1 +/-10 %	+/-0.2 +/-10 %	+/-20
Last 5 Readings	13:31:37	64.90	6.78	2029.00	24.32	-0.12	-146.11
	13:34:55	64.99	6.78	2029.97	21.58	-0.12	-146.79
	13:38:14	64.91	6.78	2030.01	17.97	-0.11	-147.18
	13:41:31	64.81	6.78	2030.13	10.10	-0.12	-147.86
	13:44:49	64.69	6.78	2030.40	9.98	-0.12	-148.20
Variance in last 3 readings	13:38:14	-0.07	0.00	0.04	-3.62	0.01	-0.39
	13:41:31	-0.11	0.00	0.13	-7.86	-0.01	-0.68
	13:44:49	-0.12	0.00	0.27	-0.12	0.00	-0.34

Notes:

In-Situ Inc.

Troll 9000 | **Low-Flow System**

11/11/13 | **ISI Low-Flow Log**

Project Information:

Operator Name	dm sj
Company Name	URS Corporation
Project Name	Solutia WGK
Site Name	Quarterly Groundwater Sampling - PCB

Pump Information:

Pump Model/Type	Proactive SS Monsoon
Tubing Type	LDPE
Tubing Diameter	0.19 [in]
Tubing Length	30.83 [ft]
Pump placement from TOC	24.83 [ft]

Well Information:

Well Id	PMA-MW-2S
Well diameter	2 [in]
Well total depth	27.38 [ft]
Depth to top of screen	22.33 [ft]
Screen length	60 [in]
Depth to Water	18.4 [ft]

Pumping information:

Final pumping rate	300 [mL/min]
Flowcell volume	771.89 [mL]
Calculated Sample Rate	155 [sec]
Sample rate	155 [sec]
Stabilized drawdown	0 [in]

Low-Flow Sampling Stabilization Summary

	Time	Temp [F]	pH [pH]	Cond [µS/cm @25C]	Turb [NTU]	RDO [mg/L]	ORP [mV]
Stabilization Settings			+/-0.2	+/-0.1 +/-3 %	+/-1 +/-10 %	+/-0.2 +/-10 %	+/-20
Last 5 Readings	14:22:42	67.14	7.10	619.50	2.50	0.15	-6.70
	14:25:22	67.26	7.09	632.82	1.18	0.14	-3.50
	14:28:03	67.30	7.08	642.04	0.49	0.09	-0.80
	14:30:43	67.35	7.07	649.17	0.02	0.08	1.34
	14:33:24	67.35	7.07	654.75	-0.18	0.07	3.43
Variance in last 3 readings	14:28:03	0.04	-0.01	9.22	-0.69	-0.04	2.70
	14:30:43	0.05	0.00	7.12	-0.47	-0.01	2.14
	14:33:24	0.00	0.00	5.58	-0.20	-0.01	2.10

Notes:

In-Situ Inc.

Troll 9000 | **Low-Flow System**
11/11/13 | **ISI Low-Flow Log**

Project Information:

Operator Name	dm sj
Company Name	URS Corporation
Project Name	Solutia WGK
Site Name	Quarterly Groundwater Sampling - PCB

Pump Information:

Pump Model/Type	Proactive SS Monsoon
Tubing Type	LDPE
Tubing Diameter	0.19 [in]
Tubing Length	65.04 [ft]
Pump placement from TOC	59.14 [ft]

Well Information:

Well Id	PMA-MW-2M
Well diameter	2 [in]
Well total depth	51.32 [ft]
Depth to top of screen	56.64 [ft]
Screen length	60 [in]
Depth to Water	18.64 [ft]

Pumping information:

Final pumping rate	300 [mL/min]
Flowcell volume	962.63 [mL]
Calculated Sample Rate	193 [sec]
Sample rate	193 [sec]
Stabilized drawdown	0 [in]

Low-Flow Sampling Stabilization Summary

	Time	Temp [F]	pH [pH]	Cond [µS/cm @25C]	Turb [NTU]	RDO [mg/L]	ORP [mV]
Stabilization Settings			+/-0.2	+/-0.1	+/-1	+/-0.2	+/-20
				+/-3 %	+/-10 %	+/-10 %	
Last 5 Readings	15:06:33	64.87	7.23	1858.90	13.11	0.16	-109.10
	15:09:53	64.94	7.22	1868.08	5.45	0.00	-118.12
	15:13:13	64.95	7.22	1869.81	37.86	-0.02	-123.98
	15:16:34	64.90	7.23	1871.59	15.78	-0.06	-128.22
	15:19:54	64.87	7.23	1872.81	6.50	-0.07	-131.25
Variance in last 3 readings	15:13:13	0.01	0.00	1.72	32.41	-0.02	-5.86
	15:16:34	-0.04	0.00	1.78	-22.08	-0.03	-4.23
	15:19:54	-0.03	0.00	1.22	-9.28	-0.01	-3.04

Notes:

In-Situ Inc.

Troll 9000 **Low-Flow System**

11/12/13 **ISI Low-Flow Log**

Project Information:

Operator Name	dm sj
Company Name	URS Corporation
Project Name	Solutia WGK
Site Name	Quarterly Groundwater Sampling - PCB

Pump Information:

Pump Model/Type	Proactive SS Monsoon
Tubing Type	LDPE
Tubing Diameter	0.19 [in]
Tubing Length	30.9 [ft]
Pump placement from TOC	24.9 [ft]

Well Information:

Well Id	PMA-MW-3S
Well diameter	2 [in]
Well total depth	27.41 [ft]
Depth to top of screen	22.4 [ft]
Screen length	60 [in]
Depth to Water	18.61 [ft]

Pumping information:

Final pumping rate	300 [mL/min]
Flowcell volume	772.28 [mL]
Calculated Sample Rate	155 [sec]
Sample rate	155 [sec]
Stabilized drawdown	0 [in]

Low-Flow Sampling Stabilization Summary

	Time	Temp [F]	pH [pH]	Cond [µS/cm @25C]	Turb [NTU]	RDO [mg/L]	ORP [mV]
Stabilization Settings			+/-0.2	+/-0.1	+/-1	+/-0.2	+/-20
				+/-3 %	+/-10 %	+/-10 %	
Last 5 Readings	9:33:04	62.05	6.59	2277.59	17.32	0.40	130.00
	9:35:44	61.96	6.66	2284.92	11.92	0.38	125.34
	9:38:25	62.42	6.70	2282.89	9.33	0.31	121.40
	9:41:05	62.47	6.72	2284.78	6.46	0.26	118.11
	9:43:46	62.64	6.75	2284.59	5.70	0.22	115.11
Variance in last 3 readings	9:38:25	0.47	0.04	-2.03	-2.59	-0.07	-3.94
	9:41:05	0.05	0.03	1.89	-2.88	-0.05	-3.29
	9:43:46	0.17	0.02	-0.19	-0.75	-0.05	-3.00

Notes:

In-Situ Inc.

Troll 9000 | **Low-Flow System**

11/12/13 | **ISI Low-Flow Log**

Project Information:

Operator Name	sj dm
Company Name	URS Corporation
Project Name	Solutia WGK
Site Name	Quarterly Groundwater Sampling - PCB

Pump Information:

Pump Model/Type	Proactive SS Monsoon
Tubing Type	LDPE
Tubing Diameter	0.19 [in]
Tubing Length	65.31 [ft]
Pump placement from TOC	59.29 [ft]

Well Information:

Well Id	PMA-MW-3M
Well diameter	2 [in]
Well total depth	61.84 [ft]
Depth to top of screen	56.81 [ft]
Screen length	60 [in]
Depth to Water	18.99 [ft]

Pumping information:

Final pumping rate	300 [mL/min]
Flowcell volume	964.13 [mL]
Calculated Sample Rate	193 [sec]
Sample rate	193 [sec]
Stabilized drawdown	0 [in]

Low-Flow Sampling Stabilization Summary

	Time	Temp [F]	pH [pH]	Cond [µS/cm @25C]	Turb [NTU]	RDO [mg/L]	ORP [mV]
Stabilization Settings			+/-0.2	+/-0.1	+/-1	+/-0.2	+/-20
				+/-3 %	+/-10 %	+/-10 %	
Last 5 Readings	10:13:26	61.57	9.12	2191.94	6.12	0.36	-147.02
	10:16:46	61.75	9.13	2201.58	8.16	0.17	-152.88
	10:20:06	61.92	9.14	2205.40	11.50	0.05	-158.40
	10:23:26	61.77	9.14	2218.49	15.63	-0.02	-162.72
	10:26:46	61.99	9.14	2215.63	2.04	-0.05	-167.52
Variance in last 3 readings	10:20:06	0.17	0.01	3.82	3.34	-0.11	-5.52
	10:23:26	-0.15	0.01	13.09	4.13	-0.07	-4.32
	10:26:46	0.22	0.00	-2.87	-13.59	-0.03	-4.79

Notes:

In-Situ Inc.

Troll 9000 | **Low-Flow System**

11/12/13 | **ISI Low-Flow Log**

Project Information:

Operator Name	sj dm
Company Name	URS Corporation
Project Name	Solutia WGK
Site Name	Quarterly Groundwater Sampling - PCB

Pump Information:

Pump Model/Type	Proactive SS Monsoon
Tubing Type	LDPE
Tubing Diameter	0.19 [in]
Tubing Length	28.83 [ft]
Pump placement from TOC	22.83 [ft]

Well Information:

Well Id	PMA-MW-4S
Well diameter	2 [in]
Well total depth	25.35 [ft]
Depth to top of screen	20.33 [ft]
Screen length	60 [in]
Depth to Water	17 [ft]

Pumping information:

Final pumping rate	300 [mL/min]
Flowcell volume	760.74 [mL]
Calculated Sample Rate	153 [sec]
Sample rate	153 [sec]
Stabilized drawdown	0 [in]

Low-Flow Sampling Stabilization Summary

	Time	Temp [F]	pH [pH]	Cond [µS/cm @25C]	Turb [NTU]	RDO [mg/L]	ORP [mV]
Stabilization Settings			+/-0.2	+/-0.1 +/-3 %	+/-1 +/-10 %	+/-0.2 +/-10 %	+/-20
Last 5 Readings	12:00:24	65.39	6.70	2107.38	23.64	0.07	-87.74
	12:03:04	65.61	6.68	2109.98	20.46	0.08	-89.23
	12:05:42	65.60	6.67	2124.10	16.15	0.04	-90.86
	12:08:21	65.62	6.67	2142.30	13.21	0.03	-92.74
	12:10:59	65.61	6.67	2155.48	9.64	0.03	-94.37
Variance in last 3 readings	12:05:42	-0.02	-0.01	14.12	-4.31	-0.04	-1.63
	12:08:21	0.02	0.00	18.20	-2.94	-0.01	-1.88
	12:10:59	-0.01	0.00	13.18	-3.57	0.00	-1.63

Notes:

In-Situ Inc.

Troll 9000 **Low-Flow System**

11/12/13 **ISI Low-Flow Log**

Project Information:

Operator Name	dm sj
Company Name	URS Corporation
Project Name	Solutia WGK
Site Name	Quarterly Groundwater Sampling - PCB

Pump Information:

Pump Model/Type	Proactive SS Monsoon
Tubing Type	LDPE
Tubing Diameter	0.19 [in]
Tubing Length	76 [ft]
Pump placement from TOC	70 [ft]

Well Information:

Well Id	PMA-MW-4D
Well diameter	2 [in]
Well total depth	73.35 [ft]
Depth to top of screen	68.5 [ft]
Screen length	60 [in]
Depth to Water	17.65 [ft]

Pumping information:

Final pumping rate	300 [mL/min]
Flowcell volume	1023.73 [mL]
Calculated Sample Rate	205 [sec]
Sample rate	205 [sec]
Stabilized drawdown	0 [in]

Low-Flow Sampling Stabilization Summary

	Time	Temp [F]	pH [pH]	Cond [µS/cm @25C]	Turb [NTU]	RDO [mg/L]	ORP [mV]
Stabilization Settings			+/-0.2	+/-0.1 +/-3 %	+/-1 +/-10 %	+/-0.2 +/-10 %	+/-20
Last 5 Readings	11:11:54	62.05	6.72	1763.59	52.52	0.20	-113.16
	11:15:26	61.85	6.67	1796.02	5.40	0.11	-116.02
	11:18:58	62.21	6.65	1812.13	42.00	0.03	-118.54
	11:22:31	62.50	6.64	1826.38	25.65	0.01	-120.59
	11:26:04	62.33	6.63	1838.02	4.12	0.00	-121.79
Variance in last 3 readings	11:18:58	0.36	-0.02	16.11	36.60	-0.08	-2.52
	11:22:31	0.28	-0.01	14.25	-16.35	-0.03	-2.05
	11:26:04	-0.16	-0.01	11.64	-21.54	-0.01	-1.20

Notes:

In-Situ Inc.

Troll 9000 | **Low-Flow System**

11/11/13 | **ISI Low-Flow Log**

Project Information:

Operator Name	dm sj
Company Name	URS Corporation
Project Name	Solutia WGK
Site Name	Quarterly Groundwater Sampling - PCB

Pump Information:

Pump Model/Type	Proactive SS Monsoon
Tubing Type	LDPE
Tubing Diameter	0.19 [in]
Tubing Length	60.37 [ft]
Pump placement from TOC	54.37 [ft]

Well Information:

Well Id	PMA-MW-5M
Well diameter	2 [in]
Well total depth	57.02 [ft]
Depth to top of screen	51.87 [ft]
Screen length	60 [in]
Depth to Water	18.28 [ft]

Pumping information:

Final pumping rate	300 [mL/min]
Flowcell volume	936.59 [mL]
Calculated Sample Rate	188 [sec]
Sample rate	188 [sec]
Stabilized drawdown	0 [in]

Low-Flow Sampling Stabilization Summary

	Time	Temp [F]	pH [pH]	Cond [µS/cm @25C]	Turb [NTU]	RDO [mg/L]	ORP [mV]
Stabilization Settings			+/-0.2	+/-0.1 +/-3 %	+/-1 +/-10 %	+/-0.2 +/-10 %	+/-20
Last 5 Readings	9:58:21	63.21	6.95	3060.24	5.48	0.09	-55.30
	10:01:36	63.35	6.98	3067.08	4.83	0.05	-59.28
	10:04:51	63.49	6.99	3073.95	12.91	0.04	-62.32
	10:08:06	63.42	7.00	3079.88	11.49	0.02	-64.97
	10:11:20	63.47	7.00	3085.38	7.64	0.01	-67.15
Variance in last 3 readings	10:04:51	0.14	0.01	6.88	8.08	-0.01	-3.04
	10:08:06	-0.07	0.01	5.92	-1.42	-0.03	-2.65
	10:11:20	0.05	0.00	5.50	-3.85	-0.01	-2.18

Notes:

In-Situ Inc.

Troll 9000 **Low-Flow System**

11/11/13 **ISI Low-Flow Log**

Project Information:

Operator Name	dm sj
Company Name	URS Corporation
Project Name	Solutia WGK
Site Name	Quarterly Groundwater Sampling - PCB

Pump Information:

Pump Model/Type	Proactive SS Monsoon
Tubing Type	LDPE
Tubing Diameter	0.19 [in]
Tubing Length	104.68 [ft]
Pump placement from TOC	98.68 [ft]

Well Information:

Well Id	PMA-MW-6D
Well diameter	2 [in]
Well total depth	101.34 [ft]
Depth to top of screen	96.18 [ft]
Screen length	60 [in]
Depth to Water	15.66 [ft]

Pumping information:

Final pumping rate	300 [mL/min]
Flowcell volume	1183.64 [mL]
Calculated Sample Rate	237 [sec]
Sample rate	237 [sec]
Stabilized drawdown	0 [in]

Low-Flow Sampling Stabilization Summary

	Time	Temp [F]	pH [pH]	Cond [µS/cm @25C]	Turb [NTU]	RDO [mg/L]	ORP [mV]
Stabilization Settings			+/-0.2	+/-0.1 +/-3 %	+/-1 +/-10 %	+/-0.2 +/-10 %	+/-20
Last 5 Readings	10:57:43	63.49	6.96	1043.53	4.95	0.42	-120.54
	11:01:49	63.94	6.95	1045.81	37.88	0.35	-123.36
	11:05:55	64.11	6.94	1046.35	103.46	0.26	-126.02
	11:10:01	64.12	6.95	1050.70	0.54	0.08	-128.07
	11:14:06	64.22	6.95	1050.62	2.27	0.06	-129.31
Variance in last 3 readings	11:05:55	0.17	0.00	0.54	65.59	-0.09	-2.65
	11:10:01	0.01	0.00	4.36	-102.93	-0.17	-2.05
	11:14:06	0.10	0.00	-0.08	1.73	-0.03	-1.24

Notes:

Appendix B

Chains-of-Custody

Savannah
5102 LaRoche Avenue

Savannah, GA 31404
phone 912.354.7858 fax 912.352.0165

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

Client Contact	Project Manager: Bob Billman	Site Contact: Michael Corbett	Date: 11/12/13	COC No:
URS Corporation	Tel/Fax: (314) 743-4108	Lab Contact: Michele Kersey	Carrier: FedEx	1 of 1 COCs
1001 Highlands Plaza Drive West, Suite 300	Analysis Turnaround Time			Job No.
St. Louis, MO 63110	Calendar (C) or Work Days (W) C			
(314) 429-0100 Phone	TAT if different from Below Standard			SDG No.
(314) 429-0462 FAX	☐ 2 weeks			
Project Name: 4Q13 PCB GW Sampling	☐ 1 week			
Site: Solutia WG Krummrich Facility	☐ 2 days			
P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	Filtered Sample	Total PCBs by 680	Sample Specific Notes:
PMA-MW-1S-1113	11/11/13	1220	G	Water	2		2	
PMA-MW-1M-1113	11/11/13	1350	G	Water	2		2	
PMA-MW-2S-1113	11/11/13	1435	G	Water	2		2	
PMA-MW-2M-1113	11/11/13	1525	G	Water	2		2	
PMA-MW-2M-1113-AD	11/11/13	1525	G	Water	2		2	
PMA-MW-6D-1113	11/11/13	1115	G	Water	2		2	
PMA-MW-5M-1113	11/11/13	1015	G	Water	2		2	
PMA-MW-01-1113-MS	11/11/13	1220	G	Water	2		2	
PMA-MW-01-1113-MSD	11/11/13	1220	G	Water	2		2	
PMA-MW-2M-1113-EB	11/11/13	1450	G	Water	2		2	

680-96083 Chain of Custody

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____ 1

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ■ Disposal By Lab ☐ Archive For _____ Months

Special Instructions/QC Requirements & Comments:

0.6/0.6/0.4°C 680-96083

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
[signature]	URS	11/12/13/1080			
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received by: [signature]	Company: TA SV	Date/Time: 11/12/13 1028

Savannah
5102 LaRoche Avenue

Savannah, GA 31404
phone 912.354.7858 fax 912.352.0165

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

Client Contact	Project Manager: Bob Billman	Site Contact: Michael Corbett	Date: 11/12/13	COC No:
URS Corporation	Tel/Fax: (314) 743-4108	Lab Contact: Michele Kersey	Carrier: FedEx	1 of 1 COCs
1001 Highlands Plaza Drive West, Suite 300	Analysis Turnaround Time			Job No.
St. Louis, MO 63110	Calendar (C) or Work Days (W) C			
(314) 429-0100 Phone	TAT if different from Below Standard			SDG No.
(314) 429-0462 FAX	☐ 2 weeks			
Project Name: 4Q13 PCB GW Sampling	☐ 1 week			
Site: Solutia WG Krummrich Facility	☐ 2 days			
P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	Filtered Sample	Total PCBs by 680	Sample Specific Notes:
PMA-MW-3S-1113	11/12/13	0950	G	Water	2		2	
PMA-MW-3M-1113		1030	G	Water	2		2	
PMA-MW-4D-1113		1130	G	Water	2		2	
PMA-MW-4S-1113		1215	G	Water	2		2	

680-96140 Chain of Custody

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____ | 1

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ■ Disposal By Lab ☐ Archive For _____ Months

Special Instructions/QC Requirements & Comments:

1.6°C
680 – 96140

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
[signature]	URS	11/12/13			
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received by: [signature]	Company: TA SV	Date/Time: 11/13/13 0936

Appendix C

Quality Assurance Report

QUALITY ASSURANCE REPORT

Solutia Inc.
W.G. Krummrich Facility
Sauget, Illinois

PCB Groundwater Quality Assessment Program
4th Quarter 2013 Data Report

Prepared for

Solutia Inc.
575 Maryville Centre Drive
St. Louis, MO 63141

January 2014

URS Corporation
1001 Highland Plaza Drive West, Suite 300
St. Louis, MO 63110
(314) 429-0100
Project # 21562962

1.0 INTRODUCTION

This Quality Assurance Report presents the findings of a review of analytical data for groundwater samples collected in November of 2013 at the Solutia W.G. Krummrich plant as part of the 4th Quarter 2013 PCB Groundwater Quality Assessment Program. The samples were collected by URS Corporation personnel and analyzed by TestAmerica Laboratories located in Savannah, Georgia using USEPA methodologies. Samples were analyzed for polychlorinated biphenyls (PCBs) by Method 680.

One hundred percent of the data were subjected to a Level III data quality review. The Level III validations were performed in order to confirm that the analytical data provided by TestAmerica were acceptable in quality for their intended use.

A total of 13 samples (ten investigative groundwater samples, one field duplicate, and one matrix spike and matrix spike duplicate (MS/MSD) pair) were analyzed by TestAmerica. Additionally, one equipment blank was collected and analyzed by Test America. These samples were analyzed as part of Sample Delivery Groups (SDGs) KPM052 and KPM053 utilizing the following USEPA Method:

- Method 680 for PCBs

Samples were reviewed following procedures outlined in the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, (USEPA 2008) and the Revised PCB Groundwater Quality Assessment Work Plan, (Solutia 2009).

The above guidelines provided the criteria to review the data. Additional quantitative criteria are given in the analytical methods. Data was qualified based on the data quality review. Qualifiers assigned indicate data that did not meet acceptance criteria and for which corrective actions were not successful or not performed. The various qualifiers are explained in **Tables 1** and **2** below:

TABLE 1 Laboratory Data Qualifiers

Lab Qualifier	Definition
U	Analyte was not detected at or above the reporting limit.
*	LCS, LCSD, MS, MSD, MD or surrogate exceeds the control limits.
E	Result exceeded the calibration range, secondary dilution required.
D	Surrogate or matrix spike recoveries were not obtained because the extract was diluted for analysis; also compounds analyzed at a dilution will be flagged with a D.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
F	MS, MSD: Spike recovery exceeds upper or lower control limits.
H	Sample was prepped or analyzed beyond the specified holding time.
B	Compound was found in the blank and sample.
4	MS, MSD: The analyte present in the original sample is 4 times greater than the matrix spike concentration; therefore, control limits are not applicable.

TABLE 2 URS Data Qualifiers

URS Qualifier	Definition
U	The analyte was analyzed for but was not detected.
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
UJ	The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
R	The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

Based on the criteria outlined, it is recommended that the results reported for these analyses are accepted for their intended use. Acceptable levels of accuracy, precision, and representativeness (based on MS/MSD, LCS, surrogate compounds and field duplicate results) were achieved for this data set, except where noted in this report. In addition, analytical completeness, defined to be the percentage of analytical results which are judged to be valid, including estimated detect/nondetect (**J/UJ**) values was 100 percent, which meets the completeness goal of 95 percent.

The data review included evaluation of the following criteria:

Organics

- Data package completeness
- Laboratory case narrative/cooler receipt form and sample holding times
- Laboratory method blanks
- Laboratory control sample (LCS) recoveries
- Surrogate spike recoveries
- Matrix Spike/Matrix Spike Duplicate (MS/MSD) sample recoveries and Relative Percent Difference (RPD) values
- Internal standard (IS) recoveries
- Laboratory duplicate results
- Field duplicate results
- Results reported from dilutions
- Additional qualifications

2.0 RECEIPT CONDITION AND SAMPLE HOLDING TIMES

Sample holding time requirements for the analyses performed are presented in the methods and/or in the data review guidelines. Review of the sample collection, extraction and analysis dates involved comparing the chain-of-custody and the laboratory data summary forms for accuracy, consistency, and holding time compliance.

The cooler receipt form for SDG KPM052 indicated that three of three coolers were received by the laboratory at temperatures of 0.4°C, 0.6°C, and 0.6°C, which are outside the 4°C ± 2°C criteria. The samples were received in good condition; therefore no qualification of data was required. Additionally, the laboratory indicated that the COC and container identification information for matrix spike/matrix spike duplicate PMA-MW-1S-1113-MS/PMA-MW-1S-1113-MSD did not match the parent sample. URS contacted the laboratory; data were reported using the correct sample IDs.

The cooler receipt form for SDG KPM053 indicated that one of one cooler was received by the laboratory at a temperature of 1.6°C, which is outside the 4°C ± 2°C criteria. The samples were received in good condition; therefore no qualification of data was required.

3.0 LABORATORY METHOD BLANK AND EQUIPMENT BLANK SAMPLES

Laboratory method blank samples evaluate the existence and magnitude of contamination problems resulting from laboratory activities. All laboratory method blank samples were analyzed at the method prescribed frequencies. No analytes were detected in the method blanks.

Equipment blank samples are used to assess the effectiveness of equipment decontamination procedures. No analytes were detected in the equipment blank.

4.0 SURROGATE SPIKE RECOVERIES

Surrogate compounds are used to evaluate overall laboratory performance for sample preparation efficiency on a per sample basis. All samples analyzed for PCBs were spiked with surrogate compounds during sample preparation. USEPA National Functional Guidelines for Superfund Organic Methods Data Review state how data is qualified, if surrogate spike recoveries do not meet evaluation criteria. Surrogate recoveries were within evaluation criteria with the exception of those surrogates in data reviews discussed further in **Appendix D**.

Surrogates were diluted out and not recovered in the PCB analysis of samples PMA-MW-4D-1113 and PMA-MW-4S-1113. No qualification of data is required.

5.0 LABORATORY CONTROL SAMPLE RECOVERIES

Laboratory control samples (LCS) are analyzed with each analytical batch to assess the accuracy of the analytical process. LCS recoveries were within evaluation criteria with the exception summarized in the table below.

LCS ID	Parameter	Analyte	LCS Recovery	LCS Criteria
LCS 680-303742/14-A	PCBs	Nonachlorobiphenyl	**121**	26-115

Analytical data reported as non-detect and associated with LCS recoveries above evaluation criteria, indicating a possible high bias, did not require qualification. No qualification of data was required.

6.0 MATRIX SPIKE/MATRIX SPIKE DUPLICATE (MS/MSD) SAMPLES

MS/MSD samples are analyzed to assess the accuracy and precision of the analytical process on an analytical sample in a particular matrix. MS/MSD samples were required to be collected at a frequency of one per 20 investigative samples in accordance with the work plan. URS Corporation submitted one MS/MSD sample set for ten investigative samples, meeting the work plan frequency requirement.

No qualifications were made to the data if the MS/MSD percent recoveries were zero due to

dilutions or if the Relative Percent Difference (RPD) was the only factor outside of criteria. Also, USEPA National Functional Guidelines for Superfund Organic Methods Data Review (USEPA 2008) states that organic data should not be qualified based on MS/MSD criteria alone. Therefore, if recoveries were outside evaluation criteria due to matrix interference or abundance of analytes, no qualifiers were assigned unless these analytes had other quality control criteria outside evaluation criteria.

Sample PMA-MW-1S-1113 was spiked and analyzed for PCBs. MS/MSD recoveries were within evaluation criteria with the exception summarized in the following table.

MS/MSD ID	Parameter	Analyte	MS/MSD Recovery	RPD	MS/MSD/RPD Criteria
PMA-MW-1S-1113-MS/MSD	PCBs	Nonachlorobiphenyl	96/**116**	17	26-115/40

Analytical data reported as non-detect and associated with MS/MSD recoveries above evaluation criteria, indicating a possible high bias, did not require qualification. No qualification of data was required.

7.0 FIELD DUPLICATE RESULTS

Field duplicate results are used to evaluate precision of the entire data collection activity, including sampling, analysis and site heterogeneity. When results for both duplicate and sample values are greater than five times the practical quantitation limit (PQL), satisfactory precision is indicated by an RPD less than or equal to 25 percent for aqueous samples. Where one or both of the results of a field duplicate pair are reported at less than five times the PQL, satisfactory precision is indicated if the field duplicate results agree within two times the quantitation limit. Field duplicate results that do not meet these criteria may indicate unsatisfactory precision of the results.

One field duplicate sample was collected for the ten investigative samples. This satisfies the requirement in the work plan (one per ten investigative samples or ten percent). Field duplicate results were within evaluation criteria with the exception summarized in the following table.

Field ID	Field Duplicate ID	Parameter	Analyte	RPD	Qualification
PMA-MW-2M-1113	PMA-MW-2M-1113-AD	PCBs	Monochlorobiphenyl	**81**	**J/J**

8.0 INTERNAL STANDARD RESPONSES

Internal standard (IS) performance criteria ensure that the GC/MS sensitivity and response are stable during each analytical run. For the PCBs (Method 680), the IS areas must be within +/- 30 percent of the preceding calibration verification (CV) IS value. Also, the IS retention times must be within 30 seconds of the preceding IS CV retention time. If the IS area count is outside

criteria, Method 680 indicates the mean IS area obtained during the initial calibration (ICAL) (+/- 50 percent) should be used.

The internal standards area responses for PCBs were verified for the data review. IS responses met the criteria as described above, with the exception summarized in the following table.

Sample ID	Parameter	Analyte	IS Area Recovery	IS Criteria
PMA-MW-2M-1113	PCBs	Chrysene-d_{12}	**76700**	36681-68121
PMA-MW-4D-1113-Run#1	PCBs	Chrysene-d_{12}	**72648**	36681-68121

Analytical data that required qualification based on internal standard (IS) data are included in the table below. Analytical data reported as non-detect and associated with internal standard recoveries above evaluation criteria, indicating a possible high bias, did not require qualification.

Sample ID	Parameter	Analyte	Qualification
PMA-MW-2M-1113	PCBs	Monochlorobiphenyl	**J**
PMA-MW-4D-1113-Run#1	PCBs	Monochlorobiphenyl	**J**
PMA-MW-4D-1113-Run#1	PCBs	Dichlorobiphenyl	**J**

9.0 RESULTS REPORTED FROM DILUTIONS

Sample PMA-MW-4S-1113 was diluted due to high levels of target analytes. Although analytes were not detected in the diluted run of sample PMA-MW-4D-1113, the original analysis in which analytes were detected was also reported. The diluted sample results for PCBs were reported at the lowest possible reporting limits.

Appendix D

Groundwater Analytical Results
(with Data Review Reports)

Solutia Krummrich Data Review
WGK PCB 4Q13

Laboratory SDG: KPM052

Data Reviewer: Melissa Mansker

Peer Reviewer: Elizabeth Kunkel

Date Reviewed: 1/13/2014

Guidance: USEPA National Functional Guidelines for Superfund Organic Methods Data Review 2008

Work Plan: Revised PCB Groundwater Quality Assessment (Solutia 2009)

Sample Identification	
PMA-MW-1S-1113	PMA-MW-1M-1113
PMA-MW-2S-1113	PMA-MW-2M-1113
PMA-MW-2M-1113-AD	PMA-MW-6D-1113
PMA-MW-5M-1113	PMA-MW-2M-1113-EB

1.0 Data Package Completeness

Were all items delivered as specified in the QAPP and COC as appropriate?

Yes

2.0 Laboratory Case Narrative \ Cooler Receipt Form

Were problems noted in the laboratory case narrative or cooler receipt form?

Yes, the laboratory case narrative indicated LCS recovery for nonachlorobiphenyl was outside evaluation criteria. The PCB MSD recovery was outside evaluation criteria for nonachlorobiphenyl in sample PMA-MW-1S-1113-MSD. Internal standard recovery for chrysene-d_{12} was outside evaluation criteria in sample PMA-MW-2M-1113. Monochlorobiphenyl was qualified due to field duplicate RPD outside evaluation criteria in field duplicate pair PMA-MW-2M-1113/PMA-MW-2M-1113-AD. These issues are addressed further in the appropriate sections below.

The cooler receipt form indicated that three of three coolers were received by the laboratory at temperatures of 0.4°C, 0.6°C, and 0.6°C, which are outside the 4°C ± 2°C criteria. The samples were received in good condition; therefore no qualification of data was required. Additionally, the laboratory indicated that the COC and container identification information for matrix spike/matrix spike duplicate PMA-MW-1S-1113-MS/PMA-MW-1S-1113-MSD did not match the parent sample. URS contacted the laboratory; data were reported using the correct sample IDs.

3.0 Holding Times

Were samples extracted/analyzed within applicable limits?

Yes

4.0 Blank Contamination

Were any analytes detected in the Method Blanks, Field Blanks or Trip Blanks?

No

5.0 Laboratory Control Sample

Were LCS recoveries within evaluation criteria?

No

LCS ID	Parameter	Analyte	LCS Recovery	LCS Criteria
LCS 680-303742/14-A	PCBs	Nonachlorobiphenyl	**121**	26-115

Analytical data reported as non-detect and associated with LCS recoveries above evaluation criteria, indicating a possible high bias, did not require qualification. No qualification of data was required.

6.0 Surrogate Recoveries

Were surrogate recoveries within evaluation criteria?

Yes

7.0 Matrix Spike and Matrix Spike Duplicate Recoveries

Were MS/MSD samples collected as part of this SDG?

Yes, sample PMA-MW-1S-1113 was spiked and analyzed for PCBs.

Were MS/MSD recoveries within evaluation criteria?

No

MS/MSD ID	Parameter	Analyte	MS/MSD Recovery	RPD	MS/MSD/RPD Criteria
PMA-MW-1S-1113-MS/MSD	PCBs	Nonachlorobiphenyl	96/**116**	17	26-115/40

Analytical data reported as non-detect and associated with MS/MSD recoveries above evaluation criteria, indicating a possible high bias, did not require qualification. No qualification of data was required.

8.0 Internal Standard (IS) Recoveries

Were internal standard area recoveries within evaluation criteria?

No

Sample ID	Parameter	Analyte	IS Area Recovery	IS Criteria
PMA-MW-2M-1113	PCBs	Chrysene-d_{12}	**76700**	36681-68121

Analytical data that required qualification based on internal standard (IS) data are included in the table below. Analytical data reported as non-detect and associated with

internal standard recoveries above evaluation criteria, indicating a possible high bias, did not require qualification.

Sample ID	Parameter	Analyte	Qualification
PMA-MW-2M-1113	PCBs	Monochlorobiphenyl	**J**

9.0 Laboratory Duplicate Results

Were laboratory duplicate samples performed as part of this SDG?

No

10.0 Field Duplicate Results

Were field duplicate samples collected as part of this SDG?

Yes

Sample ID	Field Duplicate ID
PMA-MW-2M-1113	PMA-MW-2M-1113-AD

Were field duplicates within evaluation criteria?

No

Field ID	Field Duplicate ID	Parameter	Analyte	RPD	Qualification
PMA-MW-2M-1113	PMA-MW-2M-1113-AD	PCBs	Monochlorobiphenyl	**81**	**J/J**

11.0 Sample Dilutions

For samples that were diluted and nondetect, were undiluted results also reported?

Not applicable; samples analyzed did not require dilution.

12.0 Additional Qualifications

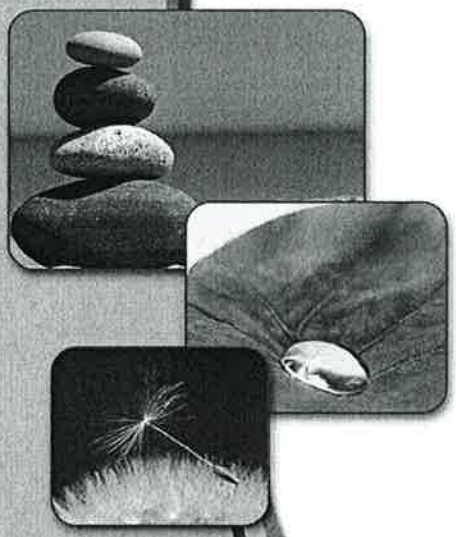
Were additional qualifications applied?

No

SDG KPM052

Results of Samples from Monitoring Wells:

PMA-MW-1S
PMA-MW-1M
PMA-MW-2S
PMA-MW-2M
PMA-MW-5M
PMA-MW-6D



LINKS

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TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Savannah
5102 LaRoche Avenue
Savannah, GA 31404
Tel: (912)354-7858

TestAmerica Job ID: 680-96083-1
TestAmerica Sample Delivery Group: KPM052
Client Project/Site: WGK PCB GW - 4Q13 - Nov 2013

For:
Solutia Inc.
575 Maryville Centre Dr.
Saint Louis, Missouri 63141

Attn: Mr. Jerry Rinaldi

Michele R Kersey

Authorized for release by:
12/10/2013 8:48:17 AM

Michele Kersey, Project Manager I
(912)354-7858
michele.kersey@testamericainc.com

Reviewed on JAN 13 2014 MM

Table of Contents

Job ID: 680-96083-1

Laboratory: TestAmerica Savannah

Narrative

CASE NARRATIVE

Client: Solutia Inc.

Project: WGK PCB GW - 4Q13 - Nov 2013

Report Number: 680-96083-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

RECEIPT

The samples were received on 11/12/2013 10:28 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 3 coolers at receipt time were 0.4° C, 0.6° C and 0.6° C.

POLYCHLORINATED BIPHENYLS (PCBS)

Samples PMA-MW-1S-1113 (680-96083-1), PMA-MW-1M-1113 (680-96083-2), PMA-MW-2S-1113 (680-96083-3), PMA-MW-2M-1113 (680-96083-4), PMA-MW-2M-1113-AD (680-96083-5), PMA-MW-6D-1113 (680-96083-6), PMA-MW-5M-1113 (680-96083-7) and PMA-MW-2M-1113-EB (680-96083-8) were analyzed for polychlorinated biphenyls (PCBs) in accordance with EPA Method 680. The samples were prepared on 11/18/2013 and analyzed on 11/29/2013, 11/30/2013 and 12/05/2013.

The matrix spike / matrix spike duplicate (MS/MSD) recoveries for batch 303742 were outside control limits. The associated laboratory control sample (LCS) recovery met acceptance criteria.

Internal standard (ISTD) response for the following sample(s) was outside of acceptance limits when compared to the area of the CCVIS(continuing calibration verification internal standard). The 680 method allows that the sample also be compared to the average internal standard area of the calibration (ICISAV). Due to limitations in the software, when the areas of the sample are out of control for either the CCVIS or ICISAV both are flagged. Although a * flag appears on the Form 8 for ICISAV, the sample is within the area range for Chrysene-d12.

The laboratory control sample (LCS) for batch 303742 recovered outside control limits for the following analytes: nonachlorobiphenyl. These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data have been reported.

Refer to the QC report for details.

No other difficulties were encountered during the PCBs analysis.

All other quality control parameters were within the acceptance limits.

JAN 13 2014

Sample Summary

Client: Solutia Inc.
Project/Site: WGK PCB GW - 4Q13 - Nov 2013

TestAmerica Job ID: 680-96083-1
SDG: KPM052

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
680-96083-1	PMA-MW-1S-1113	Water	11/11/13 12:20	11/12/13 10:28
680-96083-2	PMA-MW-1M-1113	Water	11/11/13 13:50	11/12/13 10:28
680-96083-3	PMA-MW-2S-1113	Water	11/11/13 14:35	11/12/13 10:28
680-96083-4	PMA-MW-2M-1113	Water	11/11/13 15:25	11/12/13 10:28
680-96083-5	PMA-MW-2M-1113-AD	Water	11/11/13 15:25	11/12/13 10:28
680-96083-6	PMA-MW-6D-1113	Water	11/11/13 11:15	11/12/13 10:28
680-96083-7	PMA-MW-5M-1113	Water	11/11/13 10:15	11/12/13 10:28
680-96083-8	PMA-MW-2M-1113-EB	Water	11/11/13 14:50	11/12/13 10:28

TestAmerica Savannah

Method Summary

Client: Solutia Inc.
Project/Site: WGK PCB GW - 4Q13 - Nov 2013

TestAmerica Job ID: 680-96083-1
SDG: KPM052

Method	Method Description	Protocol	Laboratory
680	Polychlorinated Biphenyls (PCBs) (GC/MS)	EPA	TAL SAV

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

TestAmerica Savannah

Definitions/Glossary

Client: Solutia Inc.
Project/Site: WGK PCB GW - 4Q13 - Nov 2013

TestAmerica Job ID: 680-96083-1
SDG: KPM052

Qualifiers

GC/MS Semi VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.
*	LCS or LCSD exceeds the control limits
F	MS/MSD Recovery and/or RPD exceeds the control limits
*	ISTD response or retention time outside acceptable limits

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

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Client Sample Results

Client: Solutia Inc.
Project/Site: WGK PCB GW - 4Q13 - Nov 2013

TestAmerica Job ID: 680-96083-1
SDG: KPM052

Client Sample ID: PMA-MW-1S-1113
Date Collected: 11/11/13 12:20
Date Received: 11/12/13 10:28

Lab Sample ID: 680-96083-1
Matrix: Water

Method: 680 - Polychlorinated Biphenyls (PCBs) (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Monochlorobiphenyl	0.10	U	0.10		ug/L		11/18/13 15:37	11/29/13 23:20	1
Dichlorobiphenyl	0.10	U	0.10		ug/L		11/18/13 15:37	11/29/13 23:20	1
Trichlorobiphenyl	0.10	U	0.10		ug/L		11/18/13 15:37	11/29/13 23:20	1
Tetrachlorobiphenyl	0.20	U	0.20		ug/L		11/18/13 15:37	11/29/13 23:20	1
Pentachlorobiphenyl	0.20	U	0.20		ug/L		11/18/13 15:37	11/29/13 23:20	1
Hexachlorobiphenyl	0.20	U	0.20		ug/L		11/18/13 15:37	11/29/13 23:20	1
Heptachlorobiphenyl	0.30	U	0.30		ug/L		11/18/13 15:37	11/29/13 23:20	1
Octachlorobiphenyl	0.30	U	0.30		ug/L		11/18/13 15:37	11/29/13 23:20	1
Nonachlorobiphenyl	0.50	U *	0.50		ug/L		11/18/13 15:37	11/29/13 23:20	1
DCB Decachlorobiphenyl	0.50	U	0.50		ug/L		11/18/13 15:37	11/29/13 23:20	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Decachlorobiphenyl-13C12	*57*		*25 - 113*	*11/18/13 15:37*	*11/29/13 23:20*	*1*

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Client Sample Results

Client: Solutia Inc.
Project/Site: WGK PCB GW - 4Q13 - Nov 2013

TestAmerica Job ID: 680-96083-1
SDG: KPM052

Client Sample ID: PMA-MW-1M-1113
Date Collected: 11/11/13 13:50
Date Received: 11/12/13 10:28

Lab Sample ID: 680-96083-2
Matrix: Water

Method: 680 - Polychlorinated Biphenyls (PCBs) (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Monochlorobiphenyl	**0.34**		0.096		ug/L		11/18/13 15:37	11/29/13 23:49	1
Dichlorobiphenyl	0.096	U	0.096		ug/L		11/18/13 15:37	11/29/13 23:49	1
Trichlorobiphenyl	0.096	U	0.096		ug/L		11/18/13 15:37	11/29/13 23:49	1
Tetrachlorobiphenyl	0.19	U	0.19		ug/L		11/18/13 15:37	11/29/13 23:49	1
Pentachlorobiphenyl	0.19	U	0.19		ug/L		11/18/13 15:37	11/29/13 23:49	1
Hexachlorobiphenyl	0.19	U	0.19		ug/L		11/18/13 15:37	11/29/13 23:49	1
Heptachlorobiphenyl	0.29	U	0.29		ug/L		11/18/13 15:37	11/29/13 23:49	1
Octachlorobiphenyl	0.29	U	0.29		ug/L		11/18/13 15:37	11/29/13 23:49	1
Nonachlorobiphenyl	0.48	U *	0.48		ug/L		11/18/13 15:37	11/29/13 23:49	1
DCB Decachlorobiphenyl	0.48	U	0.48		ug/L		11/18/13 15:37	11/29/13 23:49	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Decachlorobiphenyl-13C12	*57*		*25 - 113*	*11/18/13 15:37*	*11/29/13 23:49*	*1*

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Client Sample Results

Client: Solutia Inc.
Project/Site: WGK PCB GW - 4Q13 - Nov 2013

TestAmerica Job ID: 680-96083-1
SDG: KPM052

Client Sample ID: PMA-MW-2S-1113
Date Collected: 11/11/13 14:35
Date Received: 11/12/13 10:28

Lab Sample ID: 680-96083-3
Matrix: Water

Method: 680 - Polychlorinated Biphenyls (PCBs) (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Monochlorobiphenyl	0.098	U	0.098		ug/L		11/18/13 15:37	11/30/13 00:18	1
Dichlorobiphenyl	0.098	U	0.098		ug/L		11/18/13 15:37	11/30/13 00:18	1
Trichlorobiphenyl	0.098	U	0.098		ug/L		11/18/13 15:37	11/30/13 00:18	1
Tetrachlorobiphenyl	0.20	U	0.20		ug/L		11/18/13 15:37	11/30/13 00:18	1
Pentachlorobiphenyl	0.20	U	0.20		ug/L		11/18/13 15:37	11/30/13 00:18	1
Hexachlorobiphenyl	0.20	U	0.20		ug/L		11/18/13 15:37	11/30/13 00:18	1
Heptachlorobiphenyl	0.29	U	0.29		ug/L		11/18/13 15:37	11/30/13 00:18	1
Octachlorobiphenyl	0.29	U	0.29		ug/L		11/18/13 15:37	11/30/13 00:18	1
Nonachlorobiphenyl	0.49	U *	0.49		ug/L		11/18/13 15:37	11/30/13 00:18	1
DCB Decachlorobiphenyl	0.49	U	0.49		ug/L		11/18/13 15:37	11/30/13 00:18	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Decachlorobiphenyl-13C12	*60*		*25 - 113*	*11/18/13 15:37*	*11/30/13 00:18*	*1*

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Client Sample Results

Client: Solutia Inc.
Project/Site: WGK PCB GW - 4Q13 - Nov 2013

TestAmerica Job ID: 680-96083-1
SDG: KPM052

Client Sample ID: PMA-MW-2M-1113
Date Collected: 11/11/13 15:25
Date Received: 11/12/13 10:28

Lab Sample ID: 680-96083-4
Matrix: Water

Method: 680 - Polychlorinated Biphenyls (PCBs) (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Monochlorobiphenyl	1.4	* J	0.10		ug/L		11/18/13 15:37	12/05/13 13:11	1
Dichlorobiphenyl	0.10	U *	0.10		ug/L		11/18/13 15:37	12/05/13 13:11	1
Trichlorobiphenyl	0.10	U *	0.10		ug/L		11/18/13 15:37	12/05/13 13:11	1
Tetrachlorobiphenyl	0.20	U *	0.20		ug/L		11/18/13 15:37	12/05/13 13:11	1
Pentachlorobiphenyl	0.20	U *	0.20		ug/L		11/18/13 15:37	12/05/13 13:11	1
Hexachlorobiphenyl	0.20	U *	0.20		ug/L		11/18/13 15:37	12/05/13 13:11	1
Heptachlorobiphenyl	0.31	U *	0.31		ug/L		11/18/13 15:37	12/05/13 13:11	1
Octachlorobiphenyl	0.31	U *	0.31		ug/L		11/18/13 15:37	12/05/13 13:11	1
Nonachlorobiphenyl	0.51	U *	0.51		ug/L		11/18/13 15:37	12/05/13 13:11	1
DCB Decachlorobiphenyl	0.51	U *	0.51		ug/L		11/18/13 15:37	12/05/13 13:11	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Decachlorobiphenyl-13C12	*44*	*	*25 - 113*	*11/18/13 15:37*	*12/05/13 13:11*	*1*

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Client Sample Results

Client: Solutia Inc.
Project/Site: WGK PCB GW - 4Q13 - Nov 2013

TestAmerica Job ID: 680-96083-1
SDG: KPM052

Client Sample ID: PMA-MW-2M-1113-AD
Date Collected: 11/11/13 15:25
Date Received: 11/12/13 10:28

Lab Sample ID: 680-96083-5
Matrix: Water

Method: 680 - Polychlorinated Biphenyls (PCBs) (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Monochlorobiphenyl	**3.3**	J	0.095		ug/L		11/18/13 15:37	11/30/13 01:14	1
Dichlorobiphenyl	0.095	U	0.095		ug/L		11/18/13 15:37	11/30/13 01:14	1
Trichlorobiphenyl	0.095	U	0.095		ug/L		11/18/13 15:37	11/30/13 01:14	1
Tetrachlorobiphenyl	0.19	U	0.19		ug/L		11/18/13 15:37	11/30/13 01:14	1
Pentachlorobiphenyl	0.19	U	0.19		ug/L		11/18/13 15:37	11/30/13 01:14	1
Hexachlorobiphenyl	0.19	U	0.19		ug/L		11/18/13 15:37	11/30/13 01:14	1
Heptachlorobiphenyl	0.29	U	0.29		ug/L		11/18/13 15:37	11/30/13 01:14	1
Octachlorobiphenyl	0.29	U	0.29		ug/L		11/18/13 15:37	11/30/13 01:14	1
Nonachlorobiphenyl	0.48	U *	0.48		ug/L		11/18/13 15:37	11/30/13 01:14	1
DCB Decachlorobiphenyl	0.48	U	0.48		ug/L		11/18/13 15:37	11/30/13 01:14	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Decachlorobiphenyl-13C12	*58*		*25 - 113*	*11/18/13 15:37*	*11/30/13 01:14*	*1*

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Client Sample Results

Client: Solutia Inc.
Project/Site: WGK PCB GW - 4Q13 - Nov 2013

TestAmerica Job ID: 680-96083-1
SDG: KPM052

Client Sample ID: PMA-MW-6D-1113
Date Collected: 11/11/13 11:15
Date Received: 11/12/13 10:28

Lab Sample ID: 680-96083-6
Matrix: Water

Method: 680 - Polychlorinated Biphenyls (PCBs) (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Monochlorobiphenyl	**0.11**		0.10		ug/L		11/18/13 15:37	11/30/13 01:43	1
Dichlorobiphenyl	0.10	U	0.10		ug/L		11/18/13 15:37	11/30/13 01:43	1
Trichlorobiphenyl	0.10	U	0.10		ug/L		11/18/13 15:37	11/30/13 01:43	1
Tetrachlorobiphenyl	0.20	U	0.20		ug/L		11/18/13 15:37	11/30/13 01:43	1
Pentachlorobiphenyl	0.20	U	0.20		ug/L		11/18/13 15:37	11/30/13 01:43	1
Hexachlorobiphenyl	0.20	U	0.20		ug/L		11/18/13 15:37	11/30/13 01:43	1
Heptachlorobiphenyl	0.30	U	0.30		ug/L		11/18/13 15:37	11/30/13 01:43	1
Octachlorobiphenyl	0.30	U	0.30		ug/L		11/18/13 15:37	11/30/13 01:43	1
Nonachlorobiphenyl	0.51	U *	0.51		ug/L		11/18/13 15:37	11/30/13 01:43	1
DCB Decachlorobiphenyl	0.51	U	0.51		ug/L		11/18/13 15:37	11/30/13 01:43	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Decachlorobiphenyl-13C12	*64*		*25 - 113*	*11/18/13 15:37*	*11/30/13 01:43*	*1*

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Client Sample Results

Client: Solutia Inc.
Project/Site: WGK PCB GW - 4Q13 - Nov 2013

TestAmerica Job ID: 680-96083-1
SDG: KPM052

Client Sample ID: PMA-MW-5M-1113
Date Collected: 11/11/13 10:15
Date Received: 11/12/13 10:28

Lab Sample ID: 680-96083-7
Matrix: Water

Method: 680 - Polychlorinated Biphenyls (PCBs) (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Monochlorobiphenyl	**0.10**		0.10		ug/L		11/18/13 15:37	11/30/13 02:11	1
Dichlorobiphenyl	0.10	U	0.10		ug/L		11/18/13 15:37	11/30/13 02:11	1
Trichlorobiphenyl	0.10	U	0.10		ug/L		11/18/13 15:37	11/30/13 02:11	1
Tetrachlorobiphenyl	0.21	U	0.21		ug/L		11/18/13 15:37	11/30/13 02:11	1
Pentachlorobiphenyl	0.21	U	0.21		ug/L		11/18/13 15:37	11/30/13 02:11	1
Hexachlorobiphenyl	0.21	U	0.21		ug/L		11/18/13 15:37	11/30/13 02:11	1
Heptachlorobiphenyl	0.31	U	0.31		ug/L		11/18/13 15:37	11/30/13 02:11	1
Octachlorobiphenyl	0.31	U	0.31		ug/L		11/18/13 15:37	11/30/13 02:11	1
Nonachlorobiphenyl	0.52	U *	0.52		ug/L		11/18/13 15:37	11/30/13 02:11	1
DCB Decachlorobiphenyl	0.52	U	0.52		ug/L		11/18/13 15:37	11/30/13 02:11	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Decachlorobiphenyl-13C12	*62*		*25 - 113*	*11/18/13 15:37*	*11/30/13 02:11*	*1*

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Client Sample Results

Client: Solutia Inc.
Project/Site: WGK PCB GW - 4Q13 - Nov 2013

TestAmerica Job ID: 680-96083-1
SDG: KPM052

Client Sample ID: PMA-MW-2M-1113-EB
Date Collected: 11/11/13 14:50
Date Received: 11/12/13 10:28

Lab Sample ID: 680-96083-8
Matrix: Water

Method: 680 - Polychlorinated Biphenyls (PCBs) (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Monochlorobiphenyl	0.095	U	0.095		ug/L		11/18/13 15:37	11/30/13 02:40	1
Dichlorobiphenyl	0.095	U	0.095		ug/L		11/18/13 15:37	11/30/13 02:40	1
Trichlorobiphenyl	0.095	U	0.095		ug/L		11/18/13 15:37	11/30/13 02:40	1
Tetrachlorobiphenyl	0.19	U	0.19		ug/L		11/18/13 15:37	11/30/13 02:40	1
Pentachlorobiphenyl	0.19	U	0.19		ug/L		11/18/13 15:37	11/30/13 02:40	1
Hexachlorobiphenyl	0.19	U	0.19		ug/L		11/18/13 15:37	11/30/13 02:40	1
Heptachlorobiphenyl	0.29	U	0.29		ug/L		11/18/13 15:37	11/30/13 02:40	1
Octachlorobiphenyl	0.29	U	0.29		ug/L		11/18/13 15:37	11/30/13 02:40	1
Nonachlorobiphenyl	0.48	U *	0.48		ug/L		11/18/13 15:37	11/30/13 02:40	1
DCB Decachlorobiphenyl	0.48	U	0.48		ug/L		11/18/13 15:37	11/30/13 02:40	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Decachlorobiphenyl-13C12	*64*		*25 - 113*	*11/18/13 15:37*	*11/30/13 02:40*	*1*

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Method: 680 - Polychlorinated Biphenyls (PCBs) (GC/MS)

Lab Sample ID: MB 680-303742/13-A
Matrix: Water
Analysis Batch: 306482

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 303742

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Monochlorobiphenyl	0.10	U	0.10		ug/L		11/18/13 15:37	11/29/13 15:40	1
Dichlorobiphenyl	0.10	U	0.10		ug/L		11/18/13 15:37	11/29/13 15:40	1
Trichlorobiphenyl	0.10	U	0.10		ug/L		11/18/13 15:37	11/29/13 15:40	1
Tetrachlorobiphenyl	0.20	U	0.20		ug/L		11/18/13 15:37	11/29/13 15:40	1
Pentachlorobiphenyl	0.20	U	0.20		ug/L		11/18/13 15:37	11/29/13 15:40	1
Hexachlorobiphenyl	0.20	U	0.20		ug/L		11/18/13 15:37	11/29/13 15:40	1
Heptachlorobiphenyl	0.30	U	0.30		ug/L		11/18/13 15:37	11/29/13 15:40	1
Octachlorobiphenyl	0.30	U	0.30		ug/L		11/18/13 15:37	11/29/13 15:40	1
Nonachlorobiphenyl	0.50	U	0.50		ug/L		11/18/13 15:37	11/29/13 15:40	1
DCB Decachlorobiphenyl	0.50	U	0.50		ug/L		11/18/13 15:37	11/29/13 15:40	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Decachlorobiphenyl-13C12	*66*		*25 - 113*	*11/18/13 15:37*	*11/29/13 15:40*	*1*

Lab Sample ID: LCS 680-303742/14-A
Matrix: Water
Analysis Batch: 306482

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 303742

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Monochlorobiphenyl	2.00	1.03		ug/L		51	10 - 125
Dichlorobiphenyl	2.00	1.11		ug/L		55	10 - 110
Trichlorobiphenyl	2.00	1.20		ug/L		60	17 - 110
Tetrachlorobiphenyl	4.00	2.43		ug/L		61	18 - 110
Pentachlorobiphenyl	4.00	3.11		ug/L		78	34 - 110
Hexachlorobiphenyl	4.00	3.03		ug/L		76	31 - 110
Heptachlorobiphenyl	6.00	4.71		ug/L		78	33 - 110
Octachlorobiphenyl	6.00	5.09		ug/L		85	33 - 110
Nonachlorobiphenyl	10.0	12.1	*	ug/L		121	26 - 115
DCB Decachlorobiphenyl	10.0	8.92		ug/L		89	26 - 115

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Decachlorobiphenyl-13C12	*82*		*25 - 113*

Lab Sample ID: 680-96083-1 MS
Matrix: Water
Analysis Batch: 306624

Client Sample ID: PMA-MW-1S-1113-MS
Prep Type: Total/NA
Prep Batch: 303742

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Monochlorobiphenyl	0.10	U	2.05	0.927		ug/L		45	10 - 125
Dichlorobiphenyl	0.10	U	2.05	1.01		ug/L		49	10 - 110
Trichlorobiphenyl	0.10	U	2.05	1.09		ug/L		53	17 - 110
Tetrachlorobiphenyl	0.20	U	4.10	2.12		ug/L		52	18 - 110
Pentachlorobiphenyl	0.20	U	4.10	2.64		ug/L		64	34 - 110
Hexachlorobiphenyl	0.20	U	4.10	2.56		ug/L		63	31 - 110
Heptachlorobiphenyl	0.30	U	6.15	3.99		ug/L		65	33 - 110
Octachlorobiphenyl	0.30	U	6.15	4.06		ug/L		66	33 - 110
Nonachlorobiphenyl	0.50	U *	10.2	9.89		ug/L		96	26 - 115

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Method: 680 - Polychlorinated Biphenyls (PCBs) (GC/MS) (Continued)

Lab Sample ID: 680-96083-1 MS
Matrix: Water
Analysis Batch: 306624

Client Sample ID: PMA-MW-1S-1113-MS
Prep Type: Total/NA
Prep Batch: 303742

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
DCB Decachlorobiphenyl	0.50	U	10.2	6.89		ug/L		67	26 - 115

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
Decachlorobiphenyl-13C12	*63*		*25 - 113*

Lab Sample ID: 680-96083-1 MSD
Matrix: Water
Analysis Batch: 306624

Client Sample ID: PMA-MW-1S-1113-MSD
Prep Type: Total/NA
Prep Batch: 303742

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Monochlorobiphenyl	0.10	U	2.02	1.35		ug/L		67	10 - 125	37	40
Dichlorobiphenyl	0.10	U	2.02	1.44		ug/L		71	10 - 110	35	40
Trichlorobiphenyl	0.10	U	2.02	1.53		ug/L		76	17 - 110	34	40
Tetrachlorobiphenyl	0.20	U	4.04	2.96		ug/L		73	18 - 110	33	40
Pentachlorobiphenyl	0.20	U	4.04	3.29		ug/L		81	34 - 110	22	40
Hexachlorobiphenyl	0.20	U	4.04	3.22		ug/L		80	31 - 110	23	40
Heptachlorobiphenyl	0.30	U	6.06	5.00		ug/L		82	33 - 110	22	40
Octachlorobiphenyl	0.30	U	6.06	4.86		ug/L		80	33 - 110	18	40
Nonachlorobiphenyl	0.50	U *	10.1	11.8	F	ug/L		116	26 - 115	17	40
DCB Decachlorobiphenyl	0.50	U	10.1	8.48		ug/L		84	26 - 115	21	40

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
Decachlorobiphenyl-13C12	*78*		*25 - 113*

JAN 13 2014

QC Association Summary

Client: Solutia Inc.
Project/Site: WGK PCB GW - 4Q13 - Nov 2013

TestAmerica Job ID: 680-96083-1
SDG: KPM052

GC/MS Semi VOA

Prep Batch: 303742

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-96083-1	PMA-MW-1S-1113	Total/NA	Water	680	
680-96083-1 MS	PMA-MW-1S-1113-MS	Total/NA	Water	680	
680-96083-1 MSD	PMA-MW-1S-1113-MSD	Total/NA	Water	680	
680-96083-2	PMA-MW-1M-1113	Total/NA	Water	680	
680-96083-3	PMA-MW-2S-1113	Total/NA	Water	680	
680-96083-4	PMA-MW-2M-1113	Total/NA	Water	680	
680-96083-5	PMA-MW-2M-1113-AD	Total/NA	Water	680	
680-96083-6	PMA-MW-6D-1113	Total/NA	Water	680	
680-96083-7	PMA-MW-5M-1113	Total/NA	Water	680	
680-96083-8	PMA-MW-2M-1113-EB	Total/NA	Water	680	
LCS 680-303742/14-A	Lab Control Sample	Total/NA	Water	680	
MB 680-303742/13-A	Method Blank	Total/NA	Water	680	

Analysis Batch: 306482

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 680-303742/14-A	Lab Control Sample	Total/NA	Water	680	303742
MB 680-303742/13-A	Method Blank	Total/NA	Water	680	303742

Analysis Batch: 306624

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-96083-1	PMA-MW-1S-1113	Total/NA	Water	680	303742
680-96083-1 MS	PMA-MW-1S-1113-MS	Total/NA	Water	680	303742
680-96083-1 MSD	PMA-MW-1S-1113-MSD	Total/NA	Water	680	303742
680-96083-2	PMA-MW-1M-1113	Total/NA	Water	680	303742
680-96083-3	PMA-MW-2S-1113	Total/NA	Water	680	303742
680-96083-5	PMA-MW-2M-1113-AD	Total/NA	Water	680	303742
680-96083-6	PMA-MW-6D-1113	Total/NA	Water	680	303742
680-96083-7	PMA-MW-5M-1113	Total/NA	Water	680	303742
680-96083-8	PMA-MW-2M-1113-EB	Total/NA	Water	680	303742

Analysis Batch: 306635

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-96083-4	PMA-MW-2M-1113	Total/NA	Water	680	303742

JAN 13 2014

TestAmerica Savannah

Lab Chronicle

Client: Solutia Inc.
Project/Site: WGK PCB GW - 4Q13 - Nov 2013

TestAmerica Job ID: 680-96083-1
SDG: KPM052

Client Sample ID: PMA-MW-1S-1113

Date Collected: 11/11/13 12:20
Date Received: 11/12/13 10:28

Lab Sample ID: 680-96083-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	680			990.2 mL	1 mL	303742	11/18/13 15:37	RNJ	TAL SAV
Total/NA	Analysis	680		1	990.2 mL	1 mL	306624	11/29/13 23:20	NED	TAL SAV

Client Sample ID: PMA-MW-1M-1113

Date Collected: 11/11/13 13:50
Date Received: 11/12/13 10:28

Lab Sample ID: 680-96083-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	680			1039.1 mL	1 mL	303742	11/18/13 15:37	RNJ	TAL SAV
Total/NA	Analysis	680		1	1039.1 mL	1 mL	306624	11/29/13 23:49	NED	TAL SAV

Client Sample ID: PMA-MW-2S-1113

Date Collected: 11/11/13 14:35
Date Received: 11/12/13 10:28

Lab Sample ID: 680-96083-3
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	680			1018.1 mL	1 mL	303742	11/18/13 15:37	RNJ	TAL SAV
Total/NA	Analysis	680		1	1018.1 mL	1 mL	306624	11/30/13 00:18	NED	TAL SAV

Client Sample ID: PMA-MW-2M-1113

Date Collected: 11/11/13 15:25
Date Received: 11/12/13 10:28

Lab Sample ID: 680-96083-4
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	680			981.0 mL	1 mL	303742	11/18/13 15:37	RNJ	TAL SAV
Total/NA	Analysis	680		1	981.0 mL	1 mL	306635	12/05/13 13:11	NED	TAL SAV

Client Sample ID: PMA-MW-2M-1113-AD

Date Collected: 11/11/13 15:25
Date Received: 11/12/13 10:28

Lab Sample ID: 680-96083-5
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	680			1052.5 mL	1 mL	303742	11/18/13 15:37	RNJ	TAL SAV
Total/NA	Analysis	680		1	1052.5 mL	1 mL	306624	11/30/13 01:14	NED	TAL SAV

Client Sample ID: PMA-MW-6D-1113

Date Collected: 11/11/13 11:15
Date Received: 11/12/13 10:28

Lab Sample ID: 680-96083-6
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	680			984.4 mL	1 mL	303742	11/18/13 15:37	RNJ	TAL SAV
Total/NA	Analysis	680		1	984.4 mL	1 mL	306624	11/30/13 01:43	NED	TAL SAV

JAN 1 3 2014

Lab Chronicle

Client: Solutia Inc.
Project/Site: WGK PCB GW - 4Q13 - Nov 2013

TestAmerica Job ID: 680-96083-1
SDG: KPM052

Client Sample ID: PMA-MW-5M-1113

Date Collected: 11/11/13 10:15
Date Received: 11/12/13 10:28

Lab Sample ID: 680-96083-7

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	680			965.5 mL	1 mL	303742	11/18/13 15:37	RNJ	TAL SAV
Total/NA	Analysis	680		1	965.5 mL	1 mL	306624	11/30/13 02:11	NED	TAL SAV

Client Sample ID: PMA-MW-2M-1113-EB

Date Collected: 11/11/13 14:50
Date Received: 11/12/13 10:28

Lab Sample ID: 680-96083-8

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	680			1050.5 mL	1 mL	303742	11/18/13 15:37	RNJ	TAL SAV
Total/NA	Analysis	680		1	1050.5 mL	1 mL	306624	11/30/13 02:40	NED	TAL SAV

Laboratory References:

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

JAN 13 2014

Ragnaldsen, Amy

From: Corbett, Michael [michael.corbett@urs.com]
Sent: Tuesday, November 12, 2013 4:36 PM
To: Kunkel, Elizabeth; Ragnaldsen, Amy
Subject: RE: Questions on MS/MSD from Amy

Amy,
I was just looking at this COC myself, and yes the samples PMA-MW-01-1113-MS and PMA-MW-01-1113-MSD should be changed to PMA-MW-1S-1113-MS and PMA-MW-1S-1113-MSD, like the parent sample PMA-MW-1S-1113, collected at 1220. Do you need a revised COC?

Thanks,
Mike

Michael Corbett
Geologist
URS Corporation
1001 Highlands Plaza Drive West, Suite 300
Saint Louis, MO 63110
Office phone: 314-429-0100
Cell phone: 314-409-5250

From: Kunkel, Elizabeth
Sent: Tuesday, November 12, 2013 3:28 PM
To: Corbett, Michael
Subject: Questions on MS/MSD from Amy

From: Ragnaldsen, Amy [mailto:amy.ragnaldsen@testamericainc.com]
Sent: Tuesday, November 12, 2013 3:26 PM
To: Billman, Bob; Kunkel, Elizabeth; Jerry Rinaldi; Reynolds, Meg; Mansker, Melissa; McNurlen, Nathan
Subject: Sample Login Confirmation and Lab Inquiry Regarding Sample ID for 680-96083, WGK PCB GW - 4Q13 - Nov 2013

Please see the attached chain of cusotdy.

Is the MS/MSD correct as : PMA-MW-01-1113-MS and PMA-MW-01-1113-MSD
or
Should they be PMA-MW-1S-1113-MS and PMA-MW-1S-1113-MSD like the parent sample listed first on the COC collected @ 12:20pm?

Please let me know.

Thank you,
Amy

Please let us know if we met your expectations by rating the service you received from TestAmerica on this project by visiting our website at: Project Feedback

AMY E RAGNALDSEN

TestAmerica Savannah
THE LEADER IN ENVIRONMENTAL TESTING

Tel: 912.354,7858
www.testamericainc.com

Reference: [183049]
Attachments: 2

JAN 1 3 2014

Savannah
5102 LaRoche Avenue

Savannah, GA 31404
phone 912.354.7858 fax 912.352.0165

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

Client Contact	Project Manager: Bob Billman	Site Contact: Michael Corbett	Date: 11/12/13	COC No:
URS Corporation	Tel/Fax: (314) 743-4108	Lab Contact: Michele Kersey	Carrier: FedEx	1 of 1 COCs
1001 Highlands Plaza Drive West, Suite 300	Analysis Turnaround Time			Job No.
St. Louis, MO 63110	Calendar (C) or Work Days (W) C			
(314) 429-0100 Phone	TAT if different from Below Standard			SDG No.
(314) 429-0462 FAX	☐ 2 weeks			
Project Name: 4Q13 PCB GW Sampling	☐ 1 week			
Site: Solutia WG Krummrich Facility	☐ 2 days			
PO#	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	Filtered Sample (Y/N)	Total PCBs by 680	Sample Specific Notes:
PMA-MW-1S-1113	11/11/13	1220	G	Water	2		2	
PMA-MW-1M-1113	11/11/13	1350	G	Water	2		2	
PMA-MW-2S-1113	11/11/13	1435	G	Water	2		2	
PMA-MW-2M-1113	11/11/13	1525	G	Water	2		2	
PMA-MW-2M-1113-AD	11/11/13	1525	G	Water	2		2	
PMA-MW-6D-1113	11/11/13	1115	G	Water	2		2	
PMA-MW-5M-1113	11/11/13	1015	G	Water	2		2	
PMA-MW-01-1113-MS	11/11/13	1220	G	Water	2		2	
PMA-MW-01-1113-MSD	11/11/13	1220	G	Water	2		2	
PMA-MW-2M-1113-EB	11/11/13	1450	G	Water	2		2	

680-96083 Chain of Custody

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ■ Disposal By Lab ☐ Archive For _____ Months

Special Instructions/QC Requirements & Comments:

0.6/0.6/0.4°2 680-96083

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
[signature]	URS	11/12/13/1630			
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received by: [signature]	Company: TA SL	Date/Time: 11/12/13 1028

JAN 1 8 2014

Login Sample Receipt Checklist

Client: Solutia Inc.

Job Number: 680-96083-1
SDG Number: KPM052

Login Number: 96083
List Number: 1
Creator: Conner, Keaton

List Source: TestAmerica Savannah

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

JAN 13 2014

Certification Summary

Client: Solutia Inc.
Project/Site: WGK PCB GW - 4Q13 - Nov 2013

TestAmerica Job ID: 680-96083-1
SDG: KPM052

Laboratory: TestAmerica Savannah

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
	AFCEE		SAVLAB	
A2LA	DoD ELAP		399.01	02-28-15
A2LA	ISO/IEC 17025		399.01	02-28-15
Alabama	State Program	4	41450	06-30-14
Arkansas DEQ	State Program	6	88-0692	02-01-14
California	NELAP	9	3217CA	07-31-14
Colorado	State Program	8	N/A	12-31-13 *
Connecticut	State Program	1	PH-0161	03-31-15
Florida	NELAP	4	E87052	06-30-14
GA Dept. of Agriculture	State Program	4	N/A	12-31-13 *
Georgia	State Program	4	N/A	06-30-14
Georgia	State Program	4	803	06-30-14
Guam	State Program	9	09-005r	06-17-14
Hawaii	State Program	9	N/A	06-30-14
Illinois	NELAP	5	200022	11-30-13 *
Indiana	State Program	5	N/A	06-30-14
Iowa	State Program	7	353	07-01-15
Kentucky	State Program	4	90084	12-31-13 *
Kentucky (UST)	State Program	4	18	06-30-14
Louisiana	NELAP	6	30690	06-30-14
Maine	State Program	1	GA00006	08-16-14
Maryland	State Program	3	250	12-31-13 *
Massachusetts	State Program	1	M-GA006	06-30-14
Michigan	State Program	5	9925	06-30-14
Mississippi	State Program	4	N/A	06-30-14
Montana	State Program	8	CERT0081	01-01-14 *
Nebraska	State Program	7	TestAmerica-Savannah	06-30-14
New Jersey	NELAP	2	GA769	06-30-14
New Mexico	State Program	6	N/A	06-30-14
New York	NELAP	2	10842	04-01-14
North Carolina DENR	State Program	4	269	12-31-13 *
North Carolina DHHS	State Program	4	13701	07-31-14
Oklahoma	State Program	6	9984	08-31-14
Pennsylvania	NELAP	3	68-00474	06-30-14
Puerto Rico	State Program	2	GA00006	01-01-14 *
South Carolina	State Program	4	98001	06-30-14
Tennessee	State Program	4	TN02961	06-30-14
Texas	NELAP	6	T104704185-08-TX	11-30-14
USDA	Federal		SAV 3-04	04-07-14
Virginia	NELAP	3	460161	06-14-14
Washington	State Program	10	C1794	06-10-14
West Virginia	State Program	3	9950C	12-31-13 *
West Virginia DEP	State Program	3	94	06-30-14
Wisconsin	State Program	5	999819810	08-31-14
Wyoming	State Program	8	8TMS-L	06-30-14

* Expired certification is currently pending renewal and is considered valid.

JAN 13 2014

Solutia Krummrich Data Review
WGK PCB 4Q13

Laboratory SDG: KPM053 Rev. 2

Data Reviewer: Melissa Mansker

Peer Reviewer: Elizabeth Kunkel

Date Reviewed: 1/20/2014

Guidance: USEPA National Functional Guidelines for Superfund Organic Methods Data Review 2008

Work Plan: Revised PCB Groundwater Quality Assessment (Solutia 2009)

Sample Identification	
PMA-MW-3S-1113	PMA-MW-3M-1113
PMA-MW-4D-1113	PMA-MW-4S-11113

1.0 Data Package Completeness

Were all items delivered as specified in the QAPP and COC as appropriate?

Yes

2.0 Laboratory Case Narrative \ Cooler Receipt Form

Were problems noted in the laboratory case narrative or cooler receipt form?

Yes, the laboratory case narrative indicated LCS recovery for nonachlorobiphenyl was outside evaluation criteria. Surrogates were diluted out and not recovered in the PCB analysis of samples PMA-MW-4D-1113-Run#2 and PMA-MW-4S-1113. Internal standard recovery for chrysene-d_{12} was outside evaluation criteria in sample PMA-MW-2M-1113-Run#1. Sample PMA-MW-4S-1113 was diluted due to high levels of target analytes. The laboratory report was revised to include the original analysis of sample PMA-MW-4D-1113 in addition to the diluted run, and the laboratory case narrative was revised to include explanation of this revision. These issues are addressed further in the appropriate sections below.

The cooler receipt form indicated that one of one cooler was received by the laboratory at a temperature of 1.6°C, which is outside the 4°C ± 2°C criteria. The samples were received in good condition; therefore no qualification of data was required.

3.0 Holding Times

Were samples extracted/analyzed within applicable limits?

Yes

4.0 Blank Contamination

Were any analytes detected in the Method Blanks, Field Blanks or Trip Blanks?

No

5.0 Laboratory Control Sample

Were LCS recoveries within evaluation criteria?

No

LCS ID	Parameter	Analyte	LCS Recovery	LCS Criteria
LCS 680-303742/14-A	PCBs	Nonachlorobiphenyl	**121**	26-115

Analytical data reported as non-detect and associated with LCS recoveries above evaluation criteria, indicating a possible high bias, did not require qualification. No qualification of data was required.

6.0 Surrogate Recoveries

Were surrogate recoveries within evaluation criteria?

Surrogates were diluted out and not recovered in the PCB analysis of samples PMA-MW-4D-1113 and PMA-MW-4S-1113. No qualification of data is required.

7.0 Matrix Spike and Matrix Spike Duplicate Recoveries

Were MS/MSD samples collected as part of this SDG?

No

8.0 Internal Standard (IS) Recoveries

Were internal standard area recoveries within evaluation criteria?

No

Sample ID	Parameter	Analyte	IS Area Recovery	IS Criteria
PMA-MW-4D-1113-Run#1	PCBs	Chrysene-d_{12}	**72648**	36681-68121

Analytical data that required qualification based on internal standard (IS) data are included in the table below. Analytical data reported as non-detect and associated with internal standard recoveries above evaluation criteria, indicating a possible high bias, did not require qualification.

Sample ID	Parameter	Analyte	Qualification
PMA-MW-4D-1113-Run#1	PCBs	Monochlorobiphenyl	**J**
PMA-MW-4D-1113-Run#1	PCBs	Dichlorobiphenyl	**J**

9.0 Laboratory Duplicate Results

Were laboratory duplicate samples performed as part of this SDG?

No

10.0 Field Duplicate Results

Were field duplicate samples collected as part of this SDG?

No

11.0 Sample Dilutions

For samples that were diluted and nondetect, were undiluted results also reported?

Yes; although analytes were not detected in the diluted run of sample PMA-MW-4D-1113, the original analysis in which analytes were detected was reported.

12.0 Additional Qualifications

Were additional qualifications applied?

No

SDG KPM053

Results of Samples from Monitoring Wells:

PMA-MW-3S
PMA-MW-3M
PMA-MW-4S
PMA-MW-4D

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Savannah
5102 LaRoche Avenue
Savannah, GA 31404
Tel: (912)354-7858

TestAmerica Job ID: 680-96140-1
TestAmerica Sample Delivery Group: KPM053
Client Project/Site: WGK PCB GW - 4Q13 - Nov 2013
Revision: 2

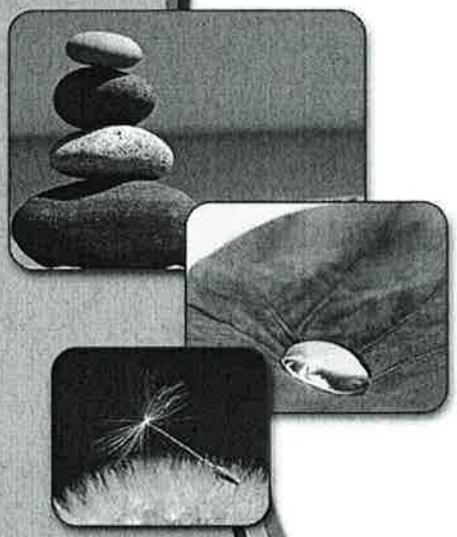
For:
Solutia Inc.
575 Maryville Centre Dr.
Saint Louis, Missouri 63141

Attn: Mr. Jerry Rinaldi

Michele R Kersey

Authorized for release by:
1/20/2014 2:17:01 PM

Michele Kersey, Project Manager I
(912)354-7858
michele.kersey@testamericainc.com



Reviewed on JAN 2 0 2014 MM

Table of Contents

JAN 20 2014

Job ID: 680-96140-1

Laboratory: TestAmerica Savannah

Narrative

CASE NARRATIVE

Client: Solutia Inc.

Project: WGK PCB GW - 4Q13 - Nov 2013

Report Number: 680-96140-1 Revision 2

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

NOTES: The report was revised to include the original analysis for sample PMA-MW-4D-1113 (680-96140-3). Results for the original analysis may be biased low due to internal standard response for the following sample exceeding the upper control limit: PMA-MW-4D-1113 (680-96140-3).

RECEIPT

The samples were received on 11/13/2013 9:36 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.6° C.

POLYCHLORINATED BIPHENYLS (PCBS)

Samples PMA-MW-3S-1113 (680-96140-1), PMA-MW-3M-1113 (680-96140-2), PMA-MW-4D-1113 (680-96140-3) and PMA-MW-4S-1113 (680-96140-4) were analyzed for polychlorinated biphenyls (PCBs) in accordance with EPA Method 680. The samples were prepared on 11/18/2013 and analyzed on 11/30/2013, 12/05/2013 and 12/08/2013.

Decachlorobiphenyl-13C12 exceeded the surrogate recovery criteria low for PMA-MW-4D-1113 (680-96140-3), PMA-MW-4S-1113 (680-96140-4).

The laboratory control sample (LCS) for batch 303742 recovered outside control limits for the following analytes: nonachlorobiphenyl. These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data have been reported.

Historical results for sample PMA-MW-4D-1113 (680-96140-3) have shown no dilutions required.

Refer to the QC report for details.

Samples PMA-MW-4D-1113 (680-96140-3)[10X] and PMA-MW-4S-1113 (680-96140-4)[10X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No other difficulties were encountered during the PCBs analysis.

All other quality control parameters were within the acceptance limits.

JAN 20 2014

TestAmerica Savannah

Sample Summary

Client: Solutia Inc.
Project/Site: WGK PCB GW - 4Q13 - Nov 2013

TestAmerica Job ID: 680-96140-1
SDG: KPM053

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
680-96140-1	PMA-MW-3S-1113	Water	11/12/13 09:50	11/13/13 09:36
680-96140-2	PMA-MW-3M-1113	Water	11/12/13 10:30	11/13/13 09:36
680-96140-3	PMA-MW-4D-1113	Water	11/12/13 11:30	11/13/13 09:36
680-96140-4	PMA-MW-4S-1113	Water	11/12/13 12:15	11/13/13 09:36

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TestAmerica Savannah

Method Summary

Client: Solutia Inc.
Project/Site: WGK PCB GW - 4Q13 - Nov 2013

TestAmerica Job ID: 680-96140-1
SDG: KPM053

Method	Method Description	Protocol	Laboratory
680	Polychlorinated Biphenyls (PCBs) (GC/MS)	EPA	TAL SAV

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

JAN 20 2014

TestAmerica Savannah

Definitions/Glossary

Client: Solutia Inc.
Project/Site: WGK PCB GW - 4Q13 - Nov 2013

TestAmerica Job ID: 680-96140-1
SDG: KPM053

Qualifiers

GC/MS Semi VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.
*	LCS or LCSD exceeds the control limits
D	Surrogate or matrix spike recoveries were not obtained because the extract was diluted for analysis; also compounds analyzed at a dilution may be flagged with a D.
*	ISTD response or retention time outside acceptable limits

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

JAN 20 2014

TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
Project/Site: WGK PCB GW - 4Q13 - Nov 2013

TestAmerica Job ID: 680-96140-1
SDG: KPM053

Client Sample ID: PMA-MW-3S-1113
Date Collected: 11/12/13 09:50
Date Received: 11/13/13 09:36

Lab Sample ID: 680-96140-1
Matrix: Water

Method: 680 - Polychlorinated Biphenyls (PCBs) (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Monochlorobiphenyl	**0.16**		0.096		ug/L		11/18/13 15:37	11/30/13 03:08	1
Dichlorobiphenyl	0.096	U	0.096		ug/L		11/18/13 15:37	11/30/13 03:08	1
Trichlorobiphenyl	0.096	U	0.096		ug/L		11/18/13 15:37	11/30/13 03:08	1
Tetrachlorobiphenyl	0.19	U	0.19		ug/L		11/18/13 15:37	11/30/13 03:08	1
Pentachlorobiphenyl	0.19	U	0.19		ug/L		11/18/13 15:37	11/30/13 03:08	1
Hexachlorobiphenyl	0.19	U	0.19		ug/L		11/18/13 15:37	11/30/13 03:08	1
Heptachlorobiphenyl	0.29	U	0.29		ug/L		11/18/13 15:37	11/30/13 03:08	1
Octachlorobiphenyl	0.29	U	0.29		ug/L		11/18/13 15:37	11/30/13 03:08	1
Nonachlorobiphenyl	0.48	U *	0.48		ug/L		11/18/13 15:37	11/30/13 03:08	1
DCB Decachlorobiphenyl	0.48	U	0.48		ug/L		11/18/13 15:37	11/30/13 03:08	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Decachlorobiphenyl-13C12	*64*		*25 - 113*	*11/18/13 15:37*	*11/30/13 03:08*	*1*

JAN 20 2014

TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
Project/Site: WGK PCB GW - 4Q13 - Nov 2013

TestAmerica Job ID: 680-96140-1
SDG: KPM053

Client Sample ID: PMA-MW-3M-1113
Date Collected: 11/12/13 10:30
Date Received: 11/13/13 09:36

Lab Sample ID: 680-96140-2
Matrix: Water

Method: 680 - Polychlorinated Biphenyls (PCBs) (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Monochlorobiphenyl	**0.48**		0.099		ug/L		11/18/13 15:37	11/30/13 03:37	1
Dichlorobiphenyl	0.099	U	0.099		ug/L		11/18/13 15:37	11/30/13 03:37	1
Trichlorobiphenyl	0.099	U	0.099		ug/L		11/18/13 15:37	11/30/13 03:37	1
Tetrachlorobiphenyl	0.20	U	0.20		ug/L		11/18/13 15:37	11/30/13 03:37	1
Pentachlorobiphenyl	0.20	U	0.20		ug/L		11/18/13 15:37	11/30/13 03:37	1
Hexachlorobiphenyl	0.20	U	0.20		ug/L		11/18/13 15:37	11/30/13 03:37	1
Heptachlorobiphenyl	0.30	U	0.30		ug/L		11/18/13 15:37	11/30/13 03:37	1
Octachlorobiphenyl	0.30	U	0.30		ug/L		11/18/13 15:37	11/30/13 03:37	1
Nonachlorobiphenyl	0.49	U *	0.49		ug/L		11/18/13 15:37	11/30/13 03:37	1
DCB Decachlorobiphenyl	0.49	U	0.49		ug/L		11/18/13 15:37	11/30/13 03:37	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Decachlorobiphenyl-13C12	*64*		*25 - 113*	*11/18/13 15:37*	*11/30/13 03:37*	*1*

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TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
Project/Site: WGK PCB GW - 4Q13 - Nov 2013

TestAmerica Job ID: 680-96140-1
SDG: KPM053

Client Sample ID: PMA-MW-4D-1113
Date Collected: 11/12/13 11:30
Date Received: 11/13/13 09:36

Lab Sample ID: 680-96140-3
Matrix: Water

Method: 680 - Polychlorinated Biphenyls (PCBs) (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Monochlorobiphenyl	**0.31**	* J	0.098		ug/L		11/18/13 15:37	12/05/13 14:03	1
Dichlorobiphenyl	**0.39**	* J	0.098		ug/L		11/18/13 15:37	12/05/13 14:03	1
Trichlorobiphenyl	0.098	U *	0.098		ug/L		11/18/13 15:37	12/05/13 14:03	1
Tetrachlorobiphenyl	0.20	U *	0.20		ug/L		11/18/13 15:37	12/05/13 14:03	1
Pentachlorobiphenyl	0.20	U *	0.20		ug/L		11/18/13 15:37	12/05/13 14:03	1
Hexachlorobiphenyl	0.20	U *	0.20		ug/L		11/18/13 15:37	12/05/13 14:03	1
Heptachlorobiphenyl	0.29	U *	0.29		ug/L		11/18/13 15:37	12/05/13 14:03	1
Octachlorobiphenyl	0.29	U *	0.29		ug/L		11/18/13 15:37	12/05/13 14:03	1
Nonachlorobiphenyl	0.49	U *	0.49		ug/L		11/18/13 15:37	12/05/13 14:03	1
DCB Decachlorobiphenyl	0.49	U *	0.49		ug/L		11/18/13 15:37	12/05/13 14:03	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Decachlorobiphenyl-13C12	*67*	*	*25 - 113*	*11/18/13 15:37*	*12/05/13 14:03*	*1*

Method: 680 - Polychlorinated Biphenyls (PCBs) (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Monochlorobiphenyl	0.98	U	0.98		ug/L		11/18/13 15:37	12/08/13 11:56	10
Dichlorobiphenyl	0.98	U	0.98		ug/L		11/18/13 15:37	12/08/13 11:56	10
Trichlorobiphenyl	0.98	U	0.98		ug/L		11/18/13 15:37	12/08/13 11:56	10
Tetrachlorobiphenyl	2.0	U	2.0		ug/L		11/18/13 15:37	12/08/13 11:56	10
Pentachlorobiphenyl	2.0	U	2.0		ug/L		11/18/13 15:37	12/08/13 11:56	10
Hexachlorobiphenyl	2.0	U	2.0		ug/L		11/18/13 15:37	12/08/13 11:56	10
Heptachlorobiphenyl	2.9	U	2.9		ug/L		11/18/13 15:37	12/08/13 11:56	10
Octachlorobiphenyl	2.9	U	2.9		ug/L		11/18/13 15:37	12/08/13 11:56	10
Nonachlorobiphenyl	4.9	U *	4.9		ug/L		11/18/13 15:37	12/08/13 11:56	10
DCB Decachlorobiphenyl	4.9	U	4.9		ug/L		11/18/13 15:37	12/08/13 11:56	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Decachlorobiphenyl-13C12	*0*	*D*	*25 - 113*	*11/18/13 15:37*	*12/08/13 11:56*	*10*

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TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
Project/Site: WGK PCB GW - 4Q13 - Nov 2013

TestAmerica Job ID: 680-96140-1
SDG: KPM053

Client Sample ID: PMA-MW-4S-1113
Date Collected: 11/12/13 12:15
Date Received: 11/13/13 09:36

Lab Sample ID: 680-96140-4
Matrix: Water

Method: 680 - Polychlorinated Biphenyls (PCBs) (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Monochlorobiphenyl	**2.3**		1.0		ug/L		11/18/13 15:37	12/05/13 14:32	10
Dichlorobiphenyl	**11**		1.0		ug/L		11/18/13 15:37	12/05/13 14:32	10
Trichlorobiphenyl	**22**		1.0		ug/L		11/18/13 15:37	12/05/13 14:32	10
Tetrachlorobiphenyl	**24**		2.0		ug/L		11/18/13 15:37	12/05/13 14:32	10
Pentachlorobiphenyl	**15**		2.0		ug/L		11/18/13 15:37	12/05/13 14:32	10
Hexachlorobiphenyl	**21**		2.0		ug/L		11/18/13 15:37	12/05/13 14:32	10
Heptachlorobiphenyl	**18**		3.0		ug/L		11/18/13 15:37	12/05/13 14:32	10
Octachlorobiphenyl	3.0	U	3.0		ug/L		11/18/13 15:37	12/05/13 14:32	10
Nonachlorobiphenyl	5.0	U *	5.0		ug/L		11/18/13 15:37	12/05/13 14:32	10
DCB Decachlorobiphenyl	5.0	U	5.0		ug/L		11/18/13 15:37	12/05/13 14:32	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Decachlorobiphenyl-13C12	*0*	*D*	*25 - 113*	*11/18/13 15:37*	*12/05/13 14:32*	*10*

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TestAmerica Savannah

QC Sample Results

Client: Solutia Inc.
Project/Site: WGK PCB GW - 4Q13 - Nov 2013

TestAmerica Job ID: 680-96140-1
SDG: KPM053

Method: 680 - Polychlorinated Biphenyls (PCBs) (GC/MS)

Lab Sample ID: MB 680-303742/13-A
Matrix: Water
Analysis Batch: 306482

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 303742

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Monochlorobiphenyl	0.10	U	0.10		ug/L		11/18/13 15:37	11/29/13 15:40	1
Dichlorobiphenyl	0.10	U	0.10		ug/L		11/18/13 15:37	11/29/13 15:40	1
Trichlorobiphenyl	0.10	U	0.10		ug/L		11/18/13 15:37	11/29/13 15:40	1
Tetrachlorobiphenyl	0.20	U	0.20		ug/L		11/18/13 15:37	11/29/13 15:40	1
Pentachlorobiphenyl	0.20	U	0.20		ug/L		11/18/13 15:37	11/29/13 15:40	1
Hexachlorobiphenyl	0.20	U	0.20		ug/L		11/18/13 15:37	11/29/13 15:40	1
Heptachlorobiphenyl	0.30	U	0.30		ug/L		11/18/13 15:37	11/29/13 15:40	1
Octachlorobiphenyl	0.30	U	0.30		ug/L		11/18/13 15:37	11/29/13 15:40	1
Nonachlorobiphenyl	0.50	U	0.50		ug/L		11/18/13 15:37	11/29/13 15:40	1
DCB Decachlorobiphenyl	0.50	U	0.50		ug/L		11/18/13 15:37	11/29/13 15:40	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Decachlorobiphenyl-13C12	*66*		*25 - 113*	*11/18/13 15:37*	*11/29/13 15:40*	*1*

Lab Sample ID: LCS 680-303742/14-A
Matrix: Water
Analysis Batch: 306482

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 303742

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Monochlorobiphenyl	2.00	1.03		ug/L		51	10 - 125
Dichlorobiphenyl	2.00	1.11		ug/L		55	10 - 110
Trichlorobiphenyl	2.00	1.20		ug/L		60	17 - 110
Tetrachlorobiphenyl	4.00	2.43		ug/L		61	18 - 110
Pentachlorobiphenyl	4.00	3.11		ug/L		78	34 - 110
Hexachlorobiphenyl	4.00	3.03		ug/L		76	31 - 110
Heptachlorobiphenyl	6.00	4.71		ug/L		78	33 - 110
Octachlorobiphenyl	6.00	5.09		ug/L		85	33 - 110
Nonachlorobiphenyl	10.0	12.1	*	ug/L		121	26 - 115
DCB Decachlorobiphenyl	10.0	8.92		ug/L		89	26 - 115

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Decachlorobiphenyl-13C12	*82*		*25 - 113*

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TestAmerica Savannah

QC Association Summary

Client: Solutia Inc.
Project/Site: WGK PCB GW - 4Q13 - Nov 2013

TestAmerica Job ID: 680-96140-1
SDG: KPM053

GC/MS Semi VOA

Prep Batch: 303742

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-96140-1	PMA-MW-3S-1113	Total/NA	Water	680	
680-96140-2	PMA-MW-3M-1113	Total/NA	Water	680	
680-96140-3	PMA-MW-4D-1113	Total/NA	Water	680	
680-96140-3 - DL	PMA-MW-4D-1113	Total/NA	Water	680	
680-96140-4	PMA-MW-4S-1113	Total/NA	Water	680	
LCS 680-303742/14-A	Lab Control Sample	Total/NA	Water	680	
MB 680-303742/13-A	Method Blank	Total/NA	Water	680	

Analysis Batch: 306482

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 680-303742/14-A	Lab Control Sample	Total/NA	Water	680	303742
MB 680-303742/13-A	Method Blank	Total/NA	Water	680	303742

Analysis Batch: 306624

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-96140-1	PMA-MW-3S-1113	Total/NA	Water	680	303742
680-96140-2	PMA-MW-3M-1113	Total/NA	Water	680	303742

Analysis Batch: 306634

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-96140-3 - DL	PMA-MW-4D-1113	Total/NA	Water	680	303742

Analysis Batch: 306635

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-96140-4	PMA-MW-4S-1113	Total/NA	Water	680	303742

Analysis Batch: 311621

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-96140-3	PMA-MW-4D-1113	Total/NA	Water	680	303742

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TestAmerica Savannah

Lab Chronicle

Client: Solutia Inc.
Project/Site: WGK PCB GW - 4Q13 - Nov 2013

TestAmerica Job ID: 680-96140-1
SDG: KPM053

Client Sample ID: PMA-MW-3S-1113

Lab Sample ID: 680-96140-1
Matrix: Water

Date Collected: 11/12/13 09:50
Date Received: 11/13/13 09:36

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	680			1044.5 mL	1 mL	303742	11/18/13 15:37	RNJ	TAL SAV
Total/NA	Analysis	680		1	1044.5 mL	1 mL	306624	11/30/13 03:08	NED	TAL SAV

Client Sample ID: PMA-MW-3M-1113

Lab Sample ID: 680-96140-2
Matrix: Water

Date Collected: 11/12/13 10:30
Date Received: 11/13/13 09:36

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	680			1014.6 mL	1 mL	303742	11/18/13 15:37	RNJ	TAL SAV
Total/NA	Analysis	680		1	1014.6 mL	1 mL	306624	11/30/13 03:37	NED	TAL SAV

Client Sample ID: PMA-MW-4D-1113

Lab Sample ID: 680-96140-3
Matrix: Water

Date Collected: 11/12/13 11:30
Date Received: 11/13/13 09:36

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	680	DL		1022.8 mL	1 mL	303742	11/18/13 15:37	RNJ	TAL SAV
Total/NA	Analysis	680	DL	10	1022.8 mL	1 mL	306634	12/08/13 11:56	NED	TAL SAV
Total/NA	Prep	680			1022.8 mL	1 mL	303742	11/18/13 15:37	RNJ	TAL SAV
Total/NA	Analysis	680		1	1022.8 mL	1 mL	311621	12/05/13 14:03	NED	TAL SAV

Client Sample ID: PMA-MW-4S-1113

Lab Sample ID: 680-96140-4
Matrix: Water

Date Collected: 11/12/13 12:15
Date Received: 11/13/13 09:36

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	680			996.8 mL	1 mL	303742	11/18/13 15:37	RNJ	TAL SAV
Total/NA	Analysis	680		10	996.8 mL	1 mL	306635	12/05/13 14:32	NED	TAL SAV

Laboratory References:

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

JAN 2 0 2014

TestAmerica Savannah

Savannah
5102 LaRoche Avenue

Savannah, GA 31404
phone 912.354.7858 fax 912.352.0165

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

Client Contact	Project Manager: Bob Billman	Site Contact: Michael Corbett	Date: 11/12/13	COC No:
URS Corporation	Tel/Fax: (314) 743-4108	Lab Contact: Michele Kersey	Carrier: FedEx	1 of 1 COCs
1001 Highlands Plaza Drive West, Suite 300	Analysis Turnaround Time			Job No.
St. Louis, MO 63110	Calendar (C) or Work Days (W) C			
(314) 429-0100 Phone	TAT if different from Below Standard			SDG No.
(314) 429-0462 FAX	☐ 2 weeks			
Project Name: 4Q13 PCB GW Sampling	☐ 1 week			
Site: Solutia WG Krummrich Facility	☐ 2 days			
P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	Filtered Sample	Total PCBs by 680	Sample Specific Notes:
PMA-MW-3S-1113	11/12/13	0950	G	Water	2		2	
PMA-MW-3M-1113		1030	G	Water	2		2	
PMA-MW-4D-1113		1130	G	Water	2		2	
PMA-MW-4S-1113	↓	1215	G	Water	2		2	

680-96140 Chain of Custody

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ■ Disposal By Lab ☐ Archive For _____ Months

Special Instructions/QC Requirements & Comments:

1.6°C
680 – 96140

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
[signature]	URS	11/12/13			
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received by: [signature]	Company: TA SV	Date/Time: 11/13/13 0936

JAN 20 2014

Login Sample Receipt Checklist

Client: Solutia Inc.

Job Number: 680-96140-1
SDG Number: KPM053

Login Number: 96140
List Number: 1
Creator: Conner, Keaton

List Source: TestAmerica Savannah

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

JAN 20 2014

Certification Summary

Client: Solutia Inc.
Project/Site: WGK PCB GW - 4Q13 - Nov 2013

TestAmerica Job ID: 680-96140-1
SDG: KPM053

Laboratory: TestAmerica Savannah

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
	AFCEE		SAVLAB	
A2LA	DoD ELAP		399.01	02-28-15
A2LA	ISO/IEC 17025		399.01	02-28-15
Alabama	State Program	4	41450	06-30-14
Arkansas DEQ	State Program	6	88-0692	02-01-14 *
California	NELAP	9	3217CA	07-31-14
Colorado	State Program	8	N/A	12-31-14
Connecticut	State Program	1	PH-0161	03-31-15
Florida	NELAP	4	E87052	06-30-14
GA Dept. of Agriculture	State Program	4	N/A	06-30-14
Georgia	State Program	4	N/A	06-30-14
Georgia	State Program	4	803	06-30-14
Guam	State Program	9	09-005r	04-17-14
Hawaii	State Program	9	N/A	06-30-14
Illinois	NELAP	5	200022	11-30-14
Indiana	State Program	5	N/A	06-30-14
Iowa	State Program	7	353	07-01-15
Kentucky (DW)	State Program	4	90084	12-31-14
Kentucky (UST)	State Program	4	18	06-30-14
Louisiana	NELAP	6	LA100015	12-31-14
Maine	State Program	1	GA00006	08-16-14
Maryland	State Program	3	250	12-31-14
Massachusetts	State Program	1	M-GA006	06-30-14
Michigan	State Program	5	9925	06-30-14
Mississippi	State Program	4	N/A	06-30-14
Montana	State Program	8	CERT0081	01-01-15
Nebraska	State Program	7	TestAmerica-Savannah	06-30-14
New Jersey	NELAP	2	GA769	06-30-14
New Mexico	State Program	6	N/A	06-30-14
New York	NELAP	2	10842	03-31-14
North Carolina DENR	State Program	4	269	12-31-14
North Carolina DHHS	State Program	4	13701	07-31-14
Oklahoma	State Program	6	9984	08-31-14
Pennsylvania	NELAP	3	68-00474	06-30-14
Puerto Rico	State Program	2	GA00006	01-01-14 *
South Carolina	State Program	4	98001	06-30-14
Tennessee	State Program	4	TN02961	06-30-14
Texas	NELAP	6	T104704185-08-TX	11-30-14
USDA	Federal		SAV 3-04	04-07-14
Virginia	NELAP	3	460161	06-14-14
Washington	State Program	10	C1794	06-10-14
West Virginia DEP	State Program	3	94	06-30-14
West Virginia DHHR	State Program	3	9950C	12-31-13 *
Wisconsin	State Program	5	999819810	08-31-14
Wyoming	State Program	8	8TMS-L	06-30-14

* Expired certification is currently pending renewal and is considered valid.

JAN 2 0 2014

TestAmerica Savannah